

Missouri Department of Conservation

MISSOURI DUCK SEASON STRUCTURE EVALUATION: 2021-2025

Hunter Input and Recommendations

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INTRODUCTION

This report summarizes the rationale for duck season date formulas and zone boundaries for the 2021-2025 duck seasons and public input the Department of Conservation (Department) received regarding potential duck season dates and zone boundaries for the 2021-2025 seasons. The opportunity to change duck season structure (continuous or split seasons and zone boundaries) is available to states about every five years. The U.S. Fish and Wildlife Service (FWS) typically allows states to submit zone boundary and continuous versus split season recommendations by May 1; however, due to the COVID-19 situation experienced in 2020, this deadline was relaxed to July 1, 2020 for the 2021-2025 duck seasons. The season structure option selected for 2021-2025 must remain in place even if the duck season is shortened to 45 or 30 days. Duck season structure options for 2021-2025 include the following:

- A statewide season with no zones or splits
- Four zones and no splits
- Three zones with potential for one split (two open segments) in each zone
- Two zones with potential for two splits (three open segments) in each zone.

The Department also considered potential changes to the duck season date formulas that have been in place since 2017. As hunters know, hunting conditions can vary tremendously from one year to the next. During some years, the best hunting can occur early in the season; during other years, it can occur late. Limiting changes to about every five years helps the Department evaluate the effectiveness of zone boundaries and season dates over a range of possible conditions.

In the pages that follow, we describe the Department's objective when setting season dates and zone boundaries as well as the guiding principles used when formulating any recommended changes to zone boundaries and season dates. We then describe our methods for collecting hunter input in more detail and then highlight the rationale for the zone and season date formulas that will be in effect from 2021-2025, including a summary of hunter input, potential impacts of the proposed season dates and zone boundaries, and some additional perspectives regarding the decisions that were made. The appendices include tables and charts that summarize the hunter input data. We thank all the hunters who took the time to complete surveys, participate in workshops, and contact Department staff.

Missouri Duck Season Structure Objectives and Guiding Principles

Objective

To establish zone boundaries and season dates that best accommodate hunter preferences, including those of hunters with varying levels of experience and those who hunt in different types of habitat (e.g., shallow water versus rivers and reservoirs), target different species (e.g., mallards versus early-season migrants), have varying physical capabilities (e.g., tolerance for cold and ice), and employ different hunting styles (e.g., water versus field hunting).

Given the range of hunter preferences, not all hunters will be completely satisfied regardless of

which season dates or zone boundaries are selected. The challenge is to provide a balance that will accommodate at least a portion of most hunters' desires. The choice of duck season structure and season dates has little impact on the overall status of duck populations. As a result, biological considerations are not as critical as providing duck seasons that contribute to overall quality hunting experiences. The FWS uses an Adaptive Harvest Management approach to determine if the season will be 60 days, 45 days, or 30 days in length and if the overall bag limit will be six ducks or three ducks. The combination of season length and bag limits is determined by the size of duck populations and habitat on the breeding grounds. States can select opening and closing dates between the Saturday nearest September 24 and January 31.

Guiding Principles

1. Current duck season options must consider the possibilities for 30-day, 45-day, and 60-day seasons. We have experienced nearly unprecedented opportunity with 60-day seasons since 1997. There is no guarantee that this will continue and potential season lengths of 30 and 45 days are possibilities that must be considered as changes in season structure are contemplated.
2. Duck season dates and zone boundaries will be recommended to accommodate a range of hunting styles and preferences. All hunter preferences are legitimate. Dates that completely favor one group will likely disenfranchise another and may not accommodate the range of hunting styles throughout a region.
3. Duck season date and zone boundary selections will seek to balance providing opportunities for new hunters and satisfying more avid hunters. Over the past two decades, duck hunter numbers have declined across the country, but have remained relatively stable in Missouri. The Department will continue to consider the implications of season structure for recruiting new hunters as well as for retaining existing hunters.
4. Duck season dates for each zone must balance the hunter preferences from different regions within each zone.
5. Although season dates will continue to be based primarily on timing for mallards, other species will also be considered. Mallards are preferred by most Missouri hunters and account for 50% or more of the duck harvest. However, other ducks comprise about 80% of the fall flight and should be considered as season dates and zone boundaries are developed.
6. Duck zone boundaries will be based upon the preferred season dates for hunters throughout a region. Boundaries will not be designed to accommodate a particular area or ownership, whether it is public or private.
7. The purpose of duck zones is to provide the "best" season dates for a particular region, not to extend the season for hunters who travel from zone to zone to extend their hunting season.
8. Recommendations for 2021-2025 will depend primarily upon hunters' input. If most hunters from a region prefer a different season structure (zones and splits) or season dates, a change will likely be recommended. Otherwise, "change for the sake of change" will not be recommended. Regardless, the time and effort taken by hunters to provide their input is valued and it will help us develop the best possible recommendation for Missouri duck hunters.

Data

Duck Hunter Opinion Surveys

We sent four e-mail invitations to the 80,672 migratory bird hunters who provided the Department with an e-mail address. A total of 2,998 of the e-mails were undeliverable and 10,926 individuals responded resulting in a response rate of 14%. Thirty-eight individuals completed the version of this survey that was posted on the web. We did a single mailing of a shorter questionnaire to a random sample of 6,000 individuals who did not provide an email address when they purchased a Migratory Bird Permit. A total of 261 surveys were undeliverable and 1,408 individuals responded resulting in a response rate of 24%. Migratory Bird Permit holders also include dove hunters so, to calculate the response rate of “duck hunters,” we first assumed that anyone that said they hunted ducks at least one out of the three previous years was a duck hunter. Post hoc, we used this number to come up with our sampling frame of duck hunters. We then used the number of responses where the individual said they duck hunted in Missouri as our “duck hunter” respondents. Based on this approach, we had a response rate of 33% for web survey duck hunters and 33% for mail survey duck hunters. We mailed an even shorter questionnaire to a random sample of 6,000 individuals who did not respond to their e-mail invitation to participate in the web survey. A total of 110 of these mailed surveys came back as undeliverable and 892 individuals responded resulting a response rate of 15%.

There were notable differences in the characteristics of those who responded to the web survey and those who responded to the mail survey. While 89% of those who responded to the web survey indicated they hunt waterfowl in Missouri, only 32% of the mail survey respondents did so. The average age for all Migratory Bird Permit purchasers was 39, for those who received a web survey invitation was 37, and for those who received a mail survey was 45. The average age of web survey respondents was 43 and the average age of mail respondents was 57. The average age of web survey nonrespondents was 36 and the average age of mail survey nonrespondents was 41. Seventy-six percent of Migratory Bird Permit purchasers, 79% of those who received the web survey, and 68% of those who received the mail survey were Missouri residents. Seventy-nine percent of the web survey respondent and 82% of the mail survey respondents were Missouri residents. We did not observe significant differences in the population density of where individuals lived in our overall sampling frame and the strata consisting of those with e-mail addresses and those without e-mail addresses.

The significant differences in the proportion of web versus mail survey respondents who said they duck hunted in our survey caused us to take a closer look at differences between strata and how they answered HIP questions about duck hunting when they purchased their Migratory Bird Permit. In the entire sampling frame, 36.5% reported that they hunted ducks at least one year in the last three years when responding to the HIP questions. This percentage increased to 41% among the stratum with e-mail addresses and dropped to 23% in the stratum without e-mail addresses. Among those who responded, 68% of web survey participants and 30% of mail survey respondents indicated they duck hunted in at least one of the last three years when responding to the HIP questions when purchasing a Migratory Bird Permit.

Overall, most Migratory Bird Permit Holders do not report that they hunt ducks each year. Only 8% of the total HIP sampling frame said they hunted duck each of the three previous years. This percentage increased to 28% among web survey respondents and declined to 4% among mail respondents. The low percentage of people reporting they hunt ducks every year may be an artifact of how HIP data is collected. While the quality of these data is improving as more people answer the HIP questions themselves when purchasing a permit online, roughly 30% still purchase a permit from a vendor who may or may not ask the HIP questions or accurately record the information.

Workshops

Missouri duck hunters had the opportunity to attend 13 workshops held throughout Missouri in late January through early March, 2020. Our goal was to hear the opinions of hunters throughout the state. We held workshops at locations near existing zone boundaries (areas where questions had arisen in recent years about zones and season dates), but also made sure to provide hunters throughout each zone the opportunity to attend meetings (Figure 1).

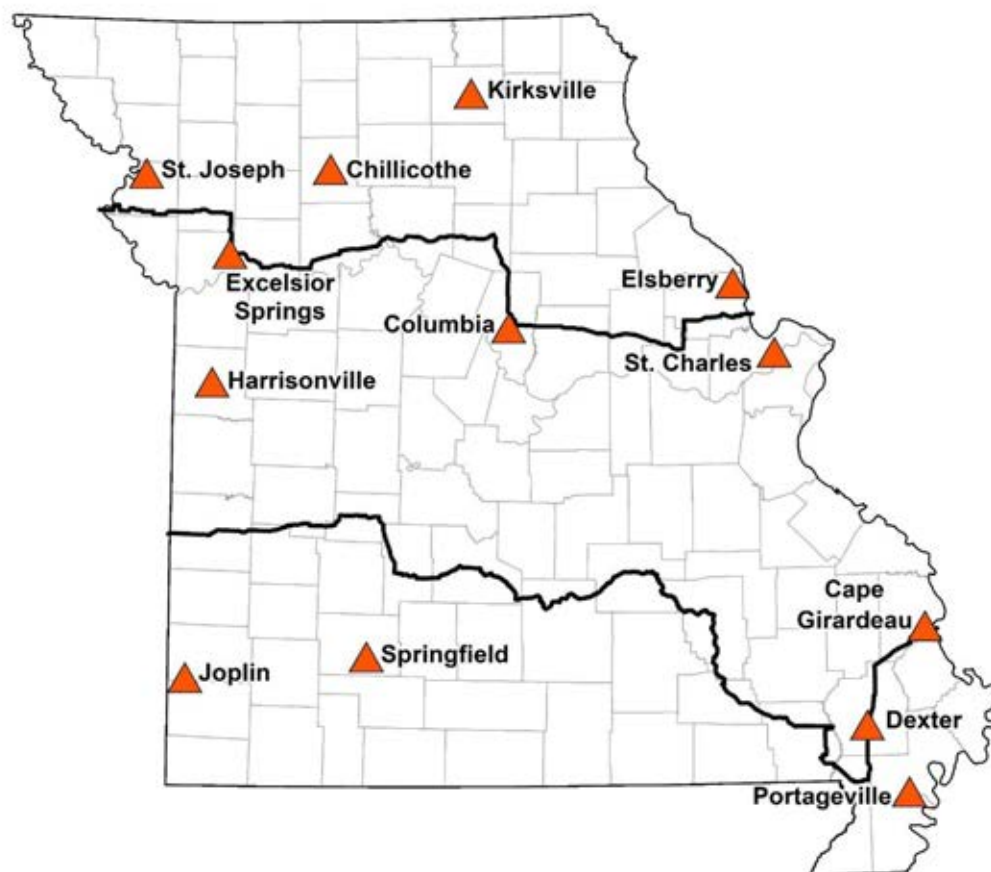


Figure 1. Locations of 13 Duck Season Dates and Zone Boundaries workshops conducted in 2020.

The workshops provided MDC with an opportunity to have more in-depth discussions with duck hunters about their season preferences. Each workshop participant received a [report](#) that summarized information about weather, habitat, harvest, and duck migrations by regions within the state. After presenting this background material, we divided workshop participants into small groups (~6 individuals/group) based on the regions in which they hunted most. The small groups gave hunters the chance to work together to develop formulas for setting duck season dates for the next five years and to adjust zone boundaries. These small groups then shared their conclusions with all the workshop participants. We received input from 77 small groups. Participants also had the opportunity to share their individual opinions with the Department by completing an individual survey with many questions similar to those included in the web and mail surveys described earlier. Of the 380 individuals who participated in the workshops, 348 completed this survey.

The results from the surveys of migratory bird hunters, the survey given to individuals who attended the workshops, and the workshop small group exercise provided three sources of information to gauge hunter preferences. The web and mail surveys provide the most representative picture of what all duck hunters in Missouri desire due to the fact it was mailed to all hunters with an e-mail address and a random sample of those without an e-mail. Those who show up for public meetings or workshops tend to be more avid hunters or those most interested in change. Based on U.S. Fish and Wildlife Service estimates, active duck hunters in Missouri hunt about 7 days a year. We found that mail survey respondents hunted an average of 17 days, web survey respondents an average of 18 days, and workshop respondents 29 days. These results suggest all our input was likely from more avid hunters.

The results from the workshop small groups reveal what hunters prefer after having the opportunity to work with other hunters to reach consensus on season date and season structure options. The following report compares the results from all three sources: the 2020 Duck Hunter Opinion Survey (mail and web), the survey of individual workshop participants, and the workshop small group recommendations. Responses from all three sources include percent of respondents/participants/small groups who expressed an opinion on a particular topic (no preference responses are not included in the data presented). The results focus on the following questions:

1. What is your most preferred week to hunt? (all surveys)
2. In the event of a split season, what one week would you prefer the season to be closed? (all surveys)
3. What nine weeks would you select for a 60-day continuous season? (2020 Duck Hunter Opinion Survey)
4. What season date formula would you most prefer? (The mail survey and workshop individual survey included 11 options that included continuous and split season options opening as early as the last weekend in October and as late as Thanksgiving. In the web survey, respondents were given a more limited set of options that would be most applicable to the region where they hunted most.)

ZONE BOUNDARY RECOMMENDATIONS AND RATIONALE

Introduction

We began our assessment by dividing the state into 20 regions and then looked at the similarities and differences in hunter preferences among regions to determine if zone boundary changes are warranted (see Figure 2). To identify regions, we first combined counties within each zone that likely would not benefit from potential zone boundary changes. In the North Zone, this included counties well north of the current zone boundary, in the Middle Zone it included the counties more distant from the North and South Zone lines, and in the South Zone it included the counties further away from the South Zone boundary. We then grouped counties that could potentially benefit from smaller zone adjustments into separate regions. This resulted in three regions in the North Zone along the zone boundary, four regions in the Middle Zone along the North Zone boundary, four regions in the Middle Zone along the South Zone boundary, and 2 regions in the South Zone along the South Zone boundary. In the pages that follow, we only include results from the seven border regions where there was the greatest likelihood for potential zone changes. In the North Zone, we combined counties into three regions along the North Zone boundary to determine if their season date preferences more closely aligned with other regions in the North Zone or those found in the Middle Zone along the Missouri River. The first of these three regions included the counties bordering the North Zone in western Missouri. The other two regions included counties bordering the North Zone boundary in central and eastern Missouri.

In the northern portion of the Middle Zone, we combined counties into five regions along the North Zone Boundary. A small number of hunters who attended the workshops hunted around Smithville Lake and indicated that the north portion of the lake that is open to hunting is also the earliest to freeze up. The second region along the North Zone line included those counties that include the Missouri River bottoms in west Missouri that formerly were in the North Zone. Here, we wanted to learn what hunters thought of the changes we made to the zone boundary in 2016. The third region included the portions of Chariton and Randolph counties that were moved into the Middle Zone in 2016. Prior to the workshops and at the workshops we heard from some hunters who indicated that they preferred North Zone season dates, so we felt it warranted a closer look. The fourth region included the counties along the Missouri River further to the east. At one time, this region was in the North Zone. The fifth region included St. Charles County and the portions of Lincoln County currently in the Middle Zone. Through direct correspondence and at the workshops, we heard from some hunters indicating they would like earlier seasons in this region.

In the southern portion of the Middle Zone, we combined counties into four regions to determine if any zone changes are needed. In the western part of the state, we combined the Middle Zone counties along the border to determine if changes are needed. We combined Bollinger and most of Cape Girardeau County into a region because historically there has been some interest in moving this area into the South Zone. The last region in the Middle Zone along the South Zone line included the portions of Stoddard, Dunklin, and Butler counties located in the Middle Zone. In the past, this region has desired season dates later than much of the Middle Zone but significantly earlier than the South Zone.

In the South Zone, we took a close look at four regions along the South Zone line. First, we

combined portions of Vernon, Barton, and Jasper counties into a region to learn more about what hunters thought of placing this region back into the South Zone in 2016. Second, we looked at the counties along the south zone boundary in the Ozarks. This region has relatively little hunting opportunity. Third, we combined the counties located along the line in southeast Missouri into a single region except for portions of Stoddard and Scott County. We include these two counties in a separate region because they were shifted to the South Zone after the 2011 season structure review and it enables us to ensure their season date preferences still align with South Zone.

Regions Used for Analysis

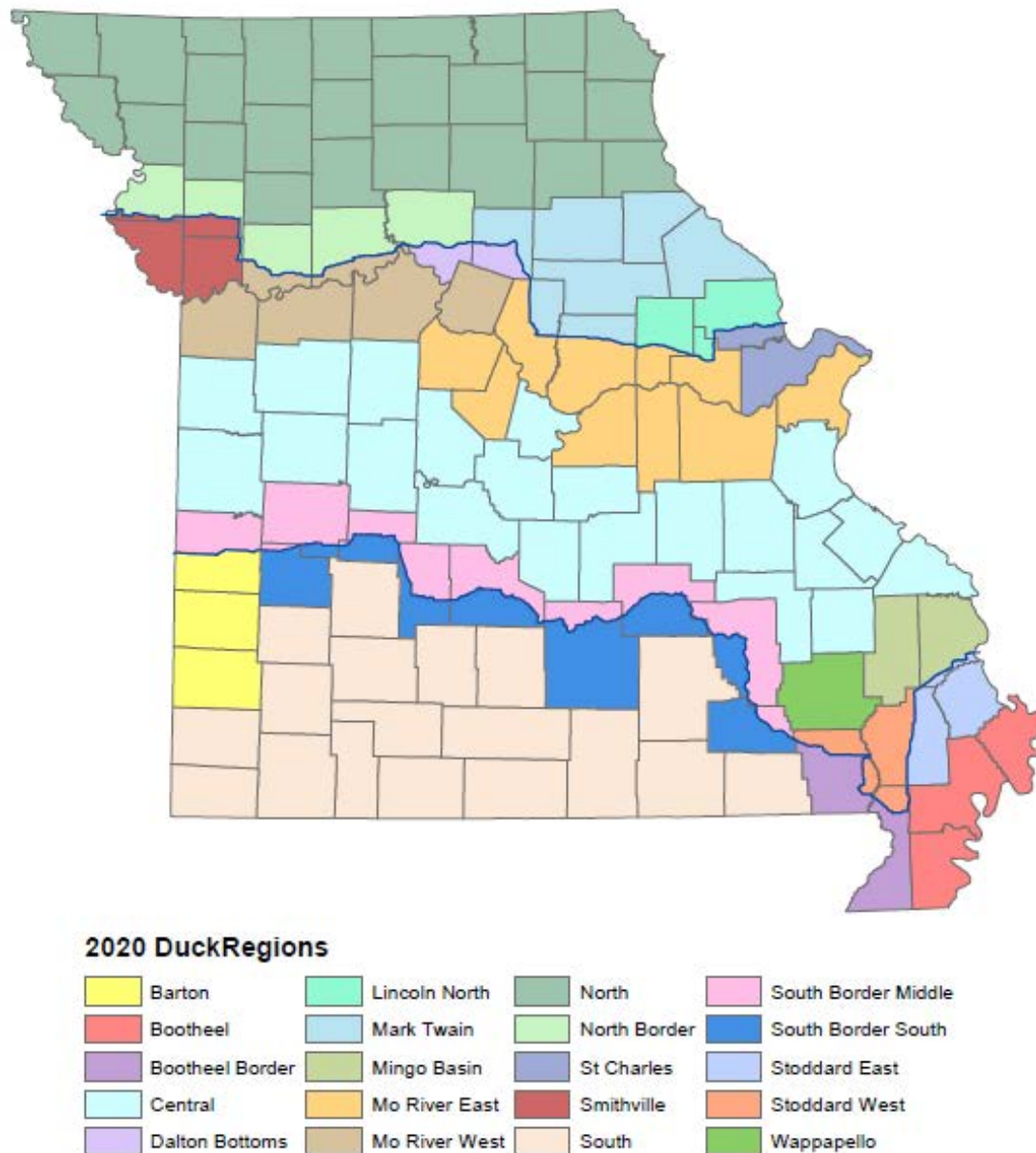


Figure 2. Twenty regions used for analyzing duck hunter preference information for 2020 waterfowl season review.

North Zone

Mark Twain Region

Recommendation

No Change

Background

This region includes Mark Twain Lake and a greater number of irrigation lakes compared to other regions in the North Zone. Given the unique habitat characteristics of this region we expected that hunters from this region may prefer to be in the Middle Zone.

Hunter Input

- Hunter season timing preferences remained aligned with the North Zone.
- When given a choice to select any nine weeks for a season with no splits, 72% of survey respondents selected nine weeks that would result in a season earlier or the same as current North Zone season dates.
- Sixty-two percent of survey respondents from this region indicated they preferred season dates the same or earlier as they now are in the North Zone
- We had three workshop small groups that focused on this region. Of those, two were satisfied with the current season dates and the third group desired an earlier opening with a December split.

Potential Impacts

- Some of the best hunting on small lakes can occur on flight days during the early season. Keeping this region in the North Zone will enable hunters to take advantage of these flight days on shallow wetlands, irrigation lakes, and Mark Twain Lake.
- When nearby shallow water freezes, ducks often move to the remaining open water in larger lakes and divers such as goldeneyes and buffleheads can be more abundant later in the season. Later season dates would provide more opportunity to take advantage of these situations.

Lincoln Region

Recommendation

No Change

Background

In 2016, it appeared there may be a growing interest of moving Lincoln County into the Middle Zone. At the time, we had relatively few people from this region attend a workshop, but those who did advocated for later seasons. To get a better handle on hunter opinions from hunters in this region, we held a workshop in Elsberry in 2020.

Hunter Input

- Hunter season timing preferences remained aligned with the North Zone.
- When given a choice to select any nine weeks for a season with no splits, 78% of survey respondents selected nine weeks that would result in a season earlier or the same as current North Zone season dates.
- Sixty-eight percent of hunters from this region indicated that their preferred season dates were the same or earlier as they are now in the North Zone
- Only four workshop small groups focused on this region. Two were interested in an earlier opener with a December split and the other two recommended the same or a later opener but they also were interested in a December split.

Potential Impacts

- Keeping this region in the North Zone will provide duck hunting opportunity during the time when the greatest number of ducks are present in this region, will provide more opportunity for early season migrants and will be less likely to miss “flight days” than if this region were in the Middle Zone
- Later season dates would accommodate those who like to target mallards and can artificially keep water open by pumping water or the use of ice eaters.

Middle Zone

Smithville Region

Recommendation

No Change

Background

This region along with the portions of the counties to the west along the Missouri River were moved into the Middle Zone in 2016 to accommodate a shift in hunter preferences towards later dates. The original thought was that Smithville Lake hunters would also benefit from this change as ducks often use bigger water later in the season. At one of the 2020 workshops, some hunters pointed out that the big water portion of Smithville is in refuge and that the upper portion available for hunting often freezes up earlier. However, at this same workshop other hunters noted they have had good hunting later in the season. Based on this input, we decided to create a region that included just the counties around Smithville to determine if hunters responding to the survey also felt this region should be moved to the North Zone. We had a total of 216 survey respondents from this region in addition to the 11 workshop participants.

Hunter Input

- Hunters were divided in their opinions but overall still were more closely aligned with the Middle Zone than the North Zone.
- When given a choice to select any nine weeks for a season with no splits, 50% of survey respondents selected options that would better align with the North Zone and 50% preferred something later.

- When presented with a narrower range of season date options, 36% of survey respondents and 55% of workshop participants selected options that aligned with the North Zone.
- Two workshop small groups focused on this region and they both recommended season dates more aligned with the North Zone.

Potential Impacts

- This region will be one to watch in the future to see if opinions change. At this point, it does not appear a change in the zone boundary would result in accommodating substantially more hunters than the current zone boundary location.
- The current line favors hunters who prefer late season hunting opportunities and are willing to scout to find the last remaining pocket of open water or are willing to break ice when the upper end of Smithville begins to ice up.
- Those hunters on Smithville who prefer hunting early season migrants and on flight days will likely to continue to miss opportunities due to the current zone boundary location.

Missouri River West Region

Recommendation

No Change

Background

The current zone boundary was first considered after the 2011 Zone Workshops, but opinions were diverse enough that no changes were made. Anticipating potential interest in this change in 2016, we held a workshop in Carrollton to target hunters who likely hunt in this region. We had one of the largest turnouts at this workshop and there was overwhelming support for changing the zone boundary. People who attended other workshops and hunted in this region also supported this change. Based on the input received in 2016, we moved this region to the Middle Zone. Overall, 32% of the hunting effort in this region occurs at Grand Pass CA, 5% on other public waters, 30% on private wetlands, and 32% on the Missouri River and surrounding fields.

Hunter Input

- When given a choice to select any nine weeks for a season with no splits, 59% indicated they prefer a continuous season to open earlier than it does now.
- However, when given specific season date formulas that also included split options, only 39% selected formulas that were more aligned with North Zone dates.
- Two out of three workshop small groups preferred similar season opening dates but recommended moving the split to December. The third small group hunted at Sunshine Lake and pointed out the loss of hunting opportunity for early season migrants, the potential to hunt flight days, and a general loss of days to ice up because of the later seasons.

Potential Impacts

- This zone boundary will continue to benefit those who hunt the Missouri River and surrounding fields. It also will continue to benefit those who hunt shallow water habitats and can take advantage of ducks dispersing from Grand Pass CA to field feed.

- Hunters who primarily hunt shallow water habitats at Grand Pass CA and other shallow water habitats such as Sunshine Lake and other oxbows will likely face more days when these habitats are frozen-over.

Dalton Bottoms Region

Recommendation

Return zone boundary back to I-70 to Hwy 65 to Hwy 41 to Hwy 24 so the river bottoms east of Miami, MO are in the North Zone.

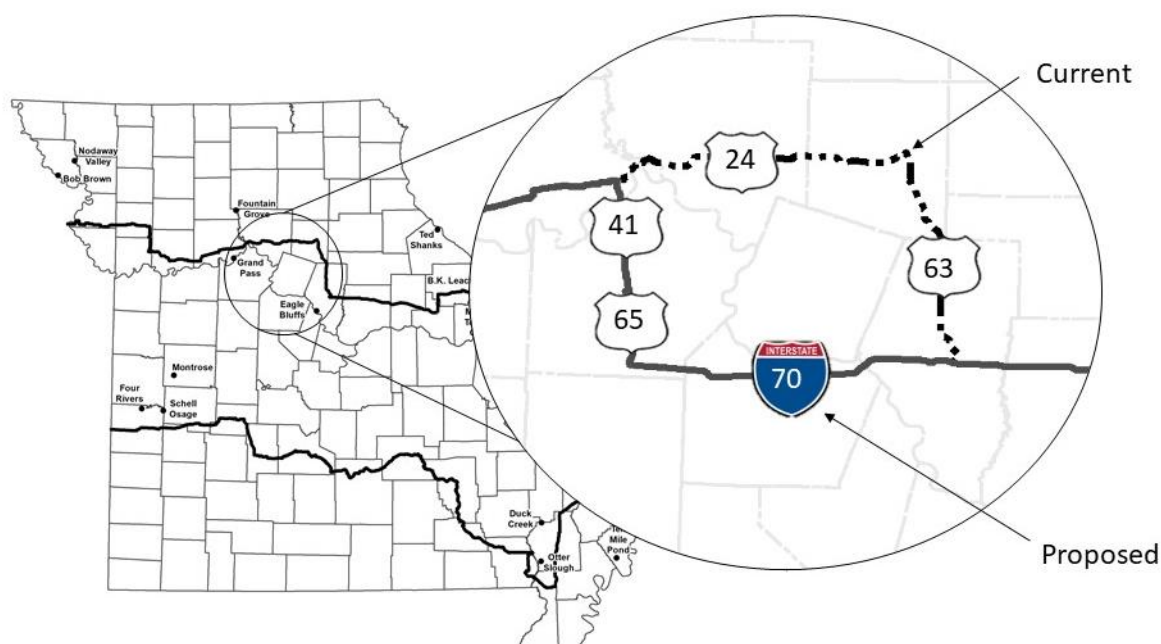


Figure 3. Proposed North Zone boundary change in central Missouri.

Background

This region was moved into the Middle Zone along with the Missouri River Bottoms west of Grand Pass CA. While most hunters emphasized the potential benefits later seasons would have for river and field hunting, we also expected it would benefit those hunters who hunted Dalton Cutoff, a shallow oxbow lake just off of the Missouri River. Prior to this review and at the workshop, we heard from some hunters who indicated that the shift to the Middle Zone had resulted in more days of ice, missed migrations, and reduced harvest. Based on this input, we looked at the hunter input data specifically for this small region to see if changes are needed.

Hunter Input

- Hunters preferred season timing that were much more aligned with the North Zone than Middle Zone.
- When given a choice to select any nine weeks for a season with no splits, 84% of survey respondents indicated a season that would open on the first week of November or earlier.

- When looking at a narrower set of season date alternatives, 64% of survey respondents and all of the workshop attendees (n=3) selected dates the same or earlier as current North Zone dates.
- The two workshop small groups focused on this region recommended the season to open the last weekend in October with no split.

Potential Impacts

- Shallow water hunters will benefit from more ice-free days.
- Hunters will be less likely to miss major migration events.
- Hunters will likely have more opportunity to harvest early season migrants.
- It will provide more opportunity to hunt the river during early season migrations.
- It could potentially lead to more hunting pressure during the late season on the portion of the Missouri River that remains in the Middle Zone.
- It could negatively affect shallow water hunters who can artificially keep water open and target ducks moving to and from feeding areas.
- It could reduce opportunities to concurrently hunt ducks and Canada geese.

St. Charles Region

Recommendation

Move the North Zone boundary in east Missouri back to I-70.

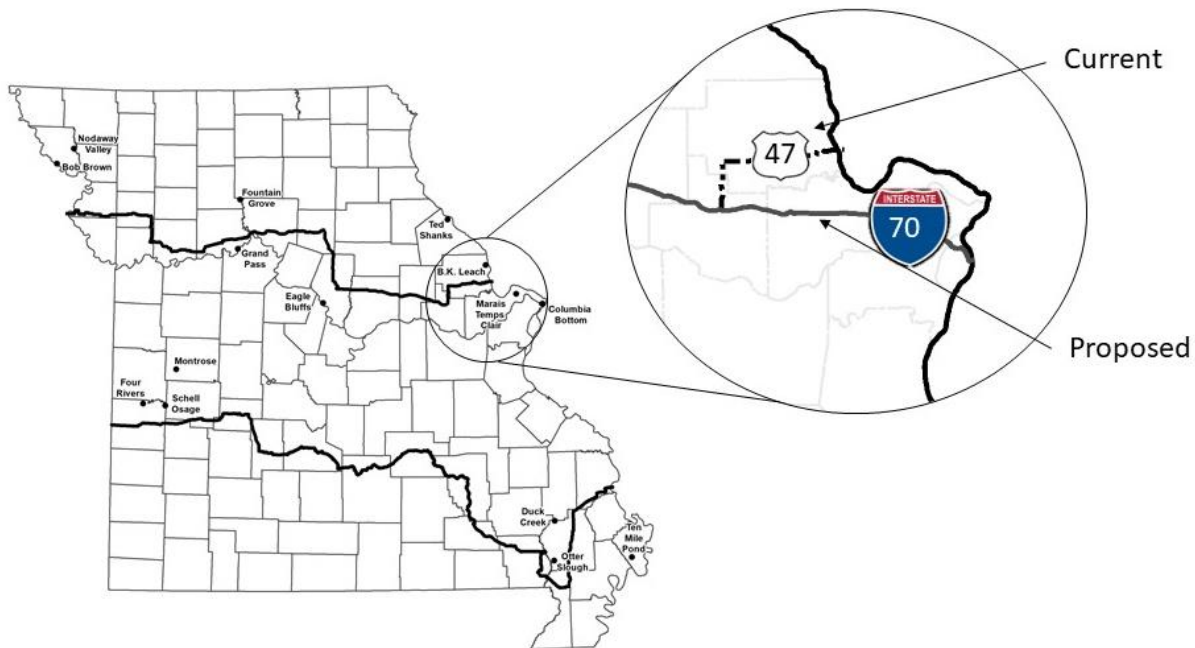


Figure 4. Proposed North Zone boundary change in east Missouri.

Background

This region was in the North Zone until 2006 when it was moved into the Middle Zone after the 2001-2005 season structure review. It has been in the Middle Zone ever since. Prior to the shift to later season dates in the Middle Zone that occurred after the 2017-2020 season structure review, hunters in the St Charles Region were generally satisfied with season dates. However, the past two seasons, when the Middle Zone opened later than it ever has and included a split in November, we began to receive more phone calls, letters, and e-mails from hunters expressing concerns about the season dates in St. Charles County. St. Charles workshop participants also generally expressed dissatisfaction with season dates. Some of the general concerns about season timing included having the season open after most early season migrants had already left, missing major migration events that often occur in November, and having the season closed when large numbers of newly arrived mallards were present. Those hunting mainly flooded corn also noted with large numbers of ducks present during the split, they could quickly consume large quantities of food and reduce food availability later in the season. Private wetland owners who have invested significantly in wetland renovations to promote more natural habitats noted that the recent late seasons work against them. The very late season hunting opportunity after most shallow water has frozen up is mainly found where private landowners artificially keep water open in flooded corn. When other habitat is limited, this can result in extremely good hunting.

Hunter Input

- St. Charles County hunter season date preferences are now more closely aligned with the North Zone.
- When given a choice to select any nine weeks for a season with no splits, 68% indicated they prefer a continuous season to open earlier than the second week of November.
- When looking at split season date preferences based on their responses to a question asking them to select a 9-week season with splits, there was not a week selected that would result in accommodating more hunters than providing a continuous season that would open beginning the first week in November.
- When given a narrower set of season date alternatives, only 30% of St. Charles hunters indicated they would like to maintain season dates as late as they are now. Twenty-five percent preferred slightly earlier seasons, and 45% preferred dates the same or earlier than the North Zone dates.
- Ten workshop small groups focused on the St Charles region. Eight of these groups proposed earlier season dates than the current formula provides with 4 small groups recommending the previous season date formula of opening the first Saturday in November. The remaining two small groups recommended dates the same or later than the current Middle Zone formula.

Potential Impacts

- This shift will result in more hunting opportunity when harvest is typically the highest.
- This change will benefit hunters who enjoy hunting early season migrants.
- There will be less likelihood of missing the most significant migration events of the season and the first major migration of mallards which often takes place around Veteran's Day.

- This shift accommodates private landowners interested in managing for more natural wetland habitats. Ducks tend to use this type of habitat earlier in the season.
- This change may reduce the number of days available to hunt late season mallards after freeze-up using artificial methods to keep water open.

Wappapello Lake Region

Recommendation

No Change

Background

Prior to the workshops, we received phone call, letters, and e-mails from hunters expressing concerns about the season dates at Wappapello Lake. During these calls, hunters noted that they experienced the best hunting early in the season. They indicated they mainly shoot species other than mallards and depend on flight days. The Middle Zone season, especially the last two years, opened after the major flight days for early migrants and the split occurred around the time of the major migration of mallards. By mid-December the U.S. Army Corps of Engineers begins lowering water levels in the Reservoir and the blinds are no longer accessible. Hunters at the workshops reinforced what we heard through earlier direct correspondence. Based on this input, we looked specifically at the workshop and survey results to determine if changes are needed and if there were changes that could be made without too significantly impacting season dates in surrounding areas.

Hunter Input

- Hunter preferences more closely align with the North Zone than Middle Zone
- When given a choice to select any nine weeks for a season with no splits, 66% indicated they prefer a continuous season to open the first week of November or earlier.
- When given a narrower set of season date alternatives, 47% of survey respondents and 66% of workshop respondents preferred that match the current North Zone season date formula.
- One small group focused on this region and they recommended the season to open the last Saturday in October.

Potential Impacts

- The current Middle Zone formula results in Wappapello Lake hunters potentially missing most migrations and then having the season open after the lake is no longer huntable.
- We explored zone boundary alternatives but could not come up with a solution that would not result in negative outcomes for significantly large geographies and much greater numbers of hunters.
- It should be noted that in surrounding counties, we are faced with the opposite challenge of hunters often wanting seasons slightly later than what is currently offered in the Middle Zone.

Mingo Basin Region

Recommendation

No Change

Background

The placement of the South Zone boundary in Southeast Missouri has historically been a source of much debate. Some hunters have questioned why the zone boundary makes a significant jog south in this region. Others have noted that duck hunting is typically not available in the timber tracts at Duck Creek early in the season. Still others have desired to have Duck Creek CA in the Middle Zone and Otter Slough CA in the South Zone to maximize the total number of days they can hunt. We continue to emphasize that we set zone boundaries to influence hunting on broader geographies and not to accommodate single areas, whether public or private, and that we do not set zone boundaries to extend duck seasons for those who travel. Historically, hunters in this region have favored duck seasons slightly later than the rest of the Middle Zone but not as late as the South Zone.

Hunter Input

- When given a choice to select any nine weeks for a season with no splits, 53% indicated they prefer a continuous season that opens the same time or earlier as it does now, 19% wanted it to open a week later, and 29% wanted it even later.
- When we provided survey respondents with a more limited range of options that were either no later than current Middle Zone options or options that began on Thanksgiving, 56% of survey respondents and all workshop respondents preferred season dates the same or earlier than they are now in the Middle Zone.
- The two workshop small groups focused on this region preferred the season to open the same time as it does now, but they preferred the split to be moved into December.

Potential Impacts

- Harvest is typically higher in November than December in this region. Remaining in the Middle Zone will increase the likelihood that the season will be open when major migrations are likely to occur and when early season migrants are present.
- Later dates could potentially result in more habitat available given precipitation patterns in this region and hunters would have more opportunity to take advantage of freeze-thaw events that often result in greater duck movements.

South Zone

Stoddard County (Stoddard East and Stoddard West regions)

Recommendation

No Change

Background

The issues in Stoddard County are similar to those described for Mingo Basin. The zone boundary in Stoddard County was moved west in 2011 based on input received at previous workshops about different patterns of use at Otter Slough CA and surrounding rice fields compared to the rice fields east of Highway 25. Prior to the season date formula changes in 2016, Middle Zone hunters in Stoddard County generally favored a season that was a little later than the Middle Zone but not as late as the South Zone. One of the reasons we moved the Middle Zone season dates as late as we did in 2016 was to provide hunting opportunities later in the season for hunters in this region. One of the challenges of setting season dates in this region is that ducks arrive in early November as they do in the remainder of the state but often stay throughout the winter. As a result, season date preferences are driven less by when ducks are likely to be present and more by other factors such as hunting styles and preferred habitats.

Hunter Input

- When given a choice to select any nine weeks for a season with no splits, it appears Stoddard County in the Middle Zone prefer earlier season dates than those in the South zone with 65% of South Zone Stoddard County hunters preferring South Zone dates compared to 47% of Middle Zone Stoddard County hunters preferring South Zone dates.
- When presented a narrower range of season date alternatives, 46% of survey respondents and 33% of workshop participants from Stoddard West (the Middle Zone portion of Stoddard County) indicated they preferred season dates that would require a zone change. Eighty-one percent of survey respondents and 71% of workshop participants who hunted Stoddard East (the South Zone portion of Stoddard County) indicated they had season date preferences that aligned with remaining in the South Zone.
- Four workshop small groups hunted primarily in the western portion of Stoddard county. Three of these small groups recommended the previous Middle Zone formula of opening the first Saturday of November. The fourth group recommended the current opener of the Saturday nearest November 6 but were interested in changing the timing of the split to December.

Potential Impacts

- Harvest is typically higher in November than December in this region. Remaining in the Middle Zone will increase the likelihood that the season will be open when major migrations are likely to occur and when early season migrants are present.
- Later dates could potentially result in more habitat available given precipitation patterns in this region and hunters would have more opportunity to take advantage of freeze-thaw events that often result in greater duck movements.
- Although slightly later seasons could potentially accommodate more hunters in this region, it would then result in season dates that would likely be too late for the remainder of the Middle Zone. However, moving this entire region into the South Zone would likely result in season dates that would be too late for the majority of hunters and would come at the cost of some of the weeks with the highest harvest in this region.

Barton Region

Recommendation

No Change

Background

The challenge of arriving at the best zone boundary in this region historically has been the lack of data. Without any nearby major state or federal refuges, data on duck abundance is limited. Similarly, relatively few hunters hunt in this region so it has been difficult to get harvest and hunter opinion survey data. As a result, input from zone workshop was a major factor in previous zone boundary decisions and the zone boundary has alternated back and forth from Highway 54 to more southerly locations in 1986, 1991, 2001, and 2017. Due to changing survey sampling techniques, this time we had survey responses from 135 individuals in addition to the 17 workshop attendees who indicated they hunted in the region.

Hunter Input

- When given a choice to select any nine weeks for a season with no splits, 76% of survey respondents indicated they preferred season timing similar to what is offered now.
- When presented with a narrower range of season date preferences, most survey respondents (64%) and workshop participants (71%) indicated they prefer the current South Zone season date formula.
- Four workshop small groups focused on the Barton region and, of these, three groups recommended the current season date formula and one recommended earlier season dates.

Potential Impacts

- Season timing in this region provides additional late season hunting when mallards are more likely to be using shallow irrigation lakes, Stockton Reservoir, and surrounding crop fields.
- It largely eliminates opportunities for wood ducks and other early season migrants that often depart Missouri by mid-November.

SEASON DATE FORMULA RECOMMENDATIONS AND RATIONALE

60-Day Season Date Formulas

North Zone Formula Recommendation

Open on the Saturday nearest October 31 with no split. The season currently opens on the first Saturday in November with no split.

Hunter Input

- Previously we had recommended placing St. Charles and Dalton Bottoms in the North Zone. We highlight North Zone hunter input excluding these two regions. Please refer to the earlier sections describing their preferences.
- Survey data pointed to a nearly even split between offering earlier seasons or something the same or later than what we now have. While 53% of respondents from the regions formerly in the North Zone selected nine weeks for a continuous season earlier than what is offered now; only 47% percent selected more specific season date formulas earlier than what we offer now.
- Only 29% of survey respondents from the former North Zone indicated they would like a season with no split to open the last weekend of October, the previous North Zone formula. In comparison, 30% desired even later season.
- Workshop participants expressed a stronger desire for earlier seasons with 57% indicating they would like the season to open in October.
- Of the 29 workshop small groups from the North Zone, 21 recommended earlier season dates than the current formula and five small groups recommended staying with the current formula or something later.

Potential Impacts

- Given the nearly even divide between those hunters in the North Zone (old boundaries) wanting much earlier/slightly earlier seasons and those wanting season the same/slightly later, this change will split the difference. Compared to the current formula, the proposed season date change will result in the season opening the same time as it does now during two of the five years from 2021-2025 and a week earlier in the other three years.
- During the three years the season will be earlier, it will provide North Zone hunters more days to hunt when harvest is typically higher. After excluding the effects of opening weekend, 12% of the harvest occurred during the first week of November from 2011-2016. The last week in October and last week of December contributed a much lower amount at 7% for each time period. This change should ensure a greater number of days occur during periods that traditionally have higher harvest.
- For the regions added to the North Zone, it will provide them the opportunity to take advantage of nearly all of the days in November when harvest is typically higher in their regions and avoid a split that many found unattractive in these regions.
- This shift is not so great that it should adversely affect the hunters who wanted the season date formula to remain the same or even shift later.
- North Zone hunters will likely miss fewer migration events and a slight increase in opportunity for early season migrants.

- This formula will still likely result in missing 1 or 2 migration events, less opportunity for early season migrants, and more days when shallow water habitat is frozen than compared to a season that would open the fourth weekend or last weekend of October.
- This formula will still provide field hunters and big water hunters opportunity at times they prefer hunting after hunting success declines for those hunting shallow water.

Observations

A common theme from direct correspondence prior to this review was to move the season date formula back to what it was before 2017. Nearly all this correspondence was from hunters who hunt in north-central Missouri around Fountain Grove or places further north. Based on this correspondence, we expected large turnouts at the workshops locations in north Missouri with hunters expressing their wishes for earlier seasons and we anticipated that survey results would reveal a strong signal for earlier seasons. While many of those who attended the workshops wanted earlier seasons, we did not see the turn out we expected at these workshops nor did we receive strong indications for survey respondents that they wanted a return to an opener on the last Saturday in October. Instead, we found that opinions were widely varied and perhaps leaned a little towards earlier seasons. We are hopeful that hunters around St. Charles recognize that their season date preferences really did not align with the North Zone or Middle Zone. The tradeoff was between staying in the Middle Zone and having a season that opens later than desired by many hunters in this region and including a split which is not desired by many hunters in this region. While a move to the North Zone will include some days in October, which may not be desired, it will provide opportunity to hunt throughout November. Particularly at the workshops, hunters conveyed the importance of having hunting opportunity throughout November.

Middle Zone Formula Recommendation

A split season that opens for nine days on the first Saturday in November, closes for five days, and then reopens for 51 days. The season currently opens on for seven days on the Saturday nearest November 6, closes for five days, and then reopens for the remaining 53 days.

Hunter Input

- Previously we had recommended placing St. Charles and Dalton Bottoms in the North Zone. We highlight Middle Zone hunter input results without these regions included.
- When given a choice to select any nine weeks for a season with no splits, 44% of Middle Zone hunters indicated they would preferred earlier seasons, 22% preferred a season that is timed similar to what it is now, and 34% would like a later season.
- When presented a narrower range of season dates, Middle Zone survey respondents were nearly evenly divided with 48% selecting season date formulas earlier than what is now offered and 52% selecting season date formulas similar to or later than the current Middle Zone formula.
- Among workshop participants, 46% wanted earlier seasons and 54% preferred season date formula options the same or later than what they are now.
- When asked what week they most preferred the split to occur, the top three choices were the third week of November (34%), the second week of November (12%), and the fourth week of November (10%). Among workshop participants, the top three choices were the

second week of November (17%), first week of December (17%), and the first week of November (16%).

- We expected that the preference for a split the third week of November was driven by the many duck hunters who also deer hunt, but this was not the case. When looking at the survey results from only those who said they do not deer hunt, we still found that the top choices were the third week of November (26%), second week of November (14%), and fourth week of November (11%).
- Of the 24 workshop small groups focused on the Middle Zone, 11 recommended earlier openers than the current formula and 13 small groups suggested a formula similar to the current formula, with seven of these groups recommending keeping a November split and six groups recommending a December split.

Potential Impacts

- The proposed Middle Zone season date formula will continue to provide more days in January.
- This formula results in season dates that will be the same as the current formula three out of the next five years and season dates a week earlier two out of the next five years. This adjustment will provide the 48% of hunters who desired earlier season dates with season timing that more closely aligns with their preferences in 2 out of 5 years from 2021-2025. During the remaining three years, season dates will be the same as they are now based on the current formula and will more closely align with the 52% of hunters who prefer the current season date formula or something even later.
- This shift will prevent the Middle Zone from missing a substantial number of days in November due to the combination of a much later start and split. For those hunters who hunt in locations that depend on early season migrants and flight days, these later season dates virtually eliminated most of their hunting opportunity when ducks were present in their locations the past two years.
- A significant migration, including mallards, often occurs around Veteran's Day. The split may occur during major migrations, but many of these ducks will likely still be present for the second opener.
- With the change in starting dates, having duck and deer season open on the same weekend was no longer an issue. Limiting the split to week days results in an additional weekend of hunting for Middle Zone hunters.

Observations

- We expected there would be a strong push to move the split from November to December based on comments we received through direct correspondence before we began our more formal public input process. We were hearing comments from hunters, especially in the northern reaches of the Middle Zone, that the late start combined with a split, especially the last two years, hurt their hunting. They noted it resulted in missing the chance to hunt early season migrants and to hunt during migration events. Given the experiences of the last two years, we were surprised that hunters, including those that do not hunt deer, still prefer a split during the third week of November. We recognize that these season dates are still too late for some hunters especially around Smithville, portions of the Missouri River bottoms in western Missouri, the Ozarks, and the

reservoirs such as Wappapello. We are hopeful that hunters from these regions recognize that one of the reasons we proposed shifting the season to begin on the first Saturday in November rather than the Saturday nearest November 6 was to restore at least some of their hunting opportunity early in the season.

South Zone Formula Recommendation

No Change: A split season that opens on Thanksgiving Day for four days, closes, and then reopens from December 7 through January 31, the latest the federal framework allows.

Hunter Input

- When given a choice to select any nine weeks for a season with no splits, 69% percent of survey respondents indicated they would prefer the season to open the last weekend of November. Opening at this time would result in similar to season timing to what is now offered in the South Zone.
- When given a narrow set of season date formulas, 67% percent of survey respondents and 65% of workshop participants indicated they preferred to maintain the current season date formula.
- Twelve workshop small groups focused on the South Zone and, of these, three recommended dates earlier than the current season date formula, seven recommended the current season date formula, one recommended to change the timing of the split to later, and one group recommended two zones with two splits.

Potential Impacts

- This option maintains offering a season as late as possible while preserving hunting opportunity over the Thanksgiving weekend, a popular time to hunt for many duck hunters.
- The season dates closely match the season dates in surrounding states.
- These season dates will continue to be much too late for those hunters who target early season divers on reservoirs near the Arkansas borders and those who depend on wood ducks and early season migrants on farm ponds and similar habitats in the Ozarks. These hunters would be best served by North Zone dates and moving the season even a week or two earlier would likely have minimal impact.

Observations

Prior to this review, we generally were hearing positive comments about the South Zone season date formulas changes implemented 2017. Hunters appreciated the opportunity to hunt over Thanksgiving weekend and to hunt as late as the federal framework allows. It has been interesting to note over the past several years that more hunters in the South Zone are mentioning how good hunting can be late in the season when they have strong south winds and experience “reverse migrations.” We continue to remind hunters that this is essentially the beginning of spring migration. It appears that as ducks winter further north and more quickly begin migrating north that spring migration may begin earlier and that ducks may be exposed to more hunting pressure during spring migration. As we continue to hear from some hunters in the South Zone who would like even later seasons, we expect this is not so much because they are seeing more ducks are arriving from the north, but that they are seeing increased movements from the south.

45-Day and 30-Day Season Date Formulas

Recommendation

Do not establish formulas for 45-day and 30-day seasons and establish those season dates as needed on an annual basis.

Rationale

- Based on revised Adaptive Harvest Management (AHM) predictive models, we expect that we will have moderate or restrictive seasons less than 2% of the time over the long-term. The maximum season length allowed in Missouri and other states in the Mississippi and Central Flyways is determined through Adaptive Harvest Management (AHM) for mid-continent mallards. Depending on the status of the midcontinent mallard population and habitat conditions, Mississippi and Central flyway states are offered liberal, moderate, or restrictive seasons. In the Mississippi Flyway, including Missouri, this includes 60-, 45-, or 30-day seasons, respectively. States working with the U.S. Fish and Wildlife Service through the Mississippi Flyway and Central Flyway recently completed an extensive review of Adaptive Harvest Management (AHM) for midcontinent mallards. Previously, the harvest objective included a constraint of the North American Waterfowl Management Plan population objective for mid-continent mallards. This resulted in the potential for slightly lower percentage of liberal seasons than if this constraint was removed and we managed for maximum sustained yield. One of the outcomes of this review was to remove this constraint. As a result, predictive models now suggest we will likely be in liberal seasons 98% of the time.
- Given the current regulatory schedule, we should know by August of the previous year if we likely will face a moderate or restrictive season the next year. This will give us about six months to review migration, harvest, and hunter opinion data and make a season date recommendation.
- It will take extreme circumstances to require shorter seasons. If this occurs there may be habitat and management issues in Missouri and other unknown factors that would not be able to anticipate at this time.
- If we are required to implement shorter seasons, we would rely more heavily on migration and harvest information than hunter input. Given the fact that it has been so long since we have had a shorter season, it is difficult to formulate opinions about season dates for shorter seasons.

APPENDICES

Hunter Input Results by Proposed Zones

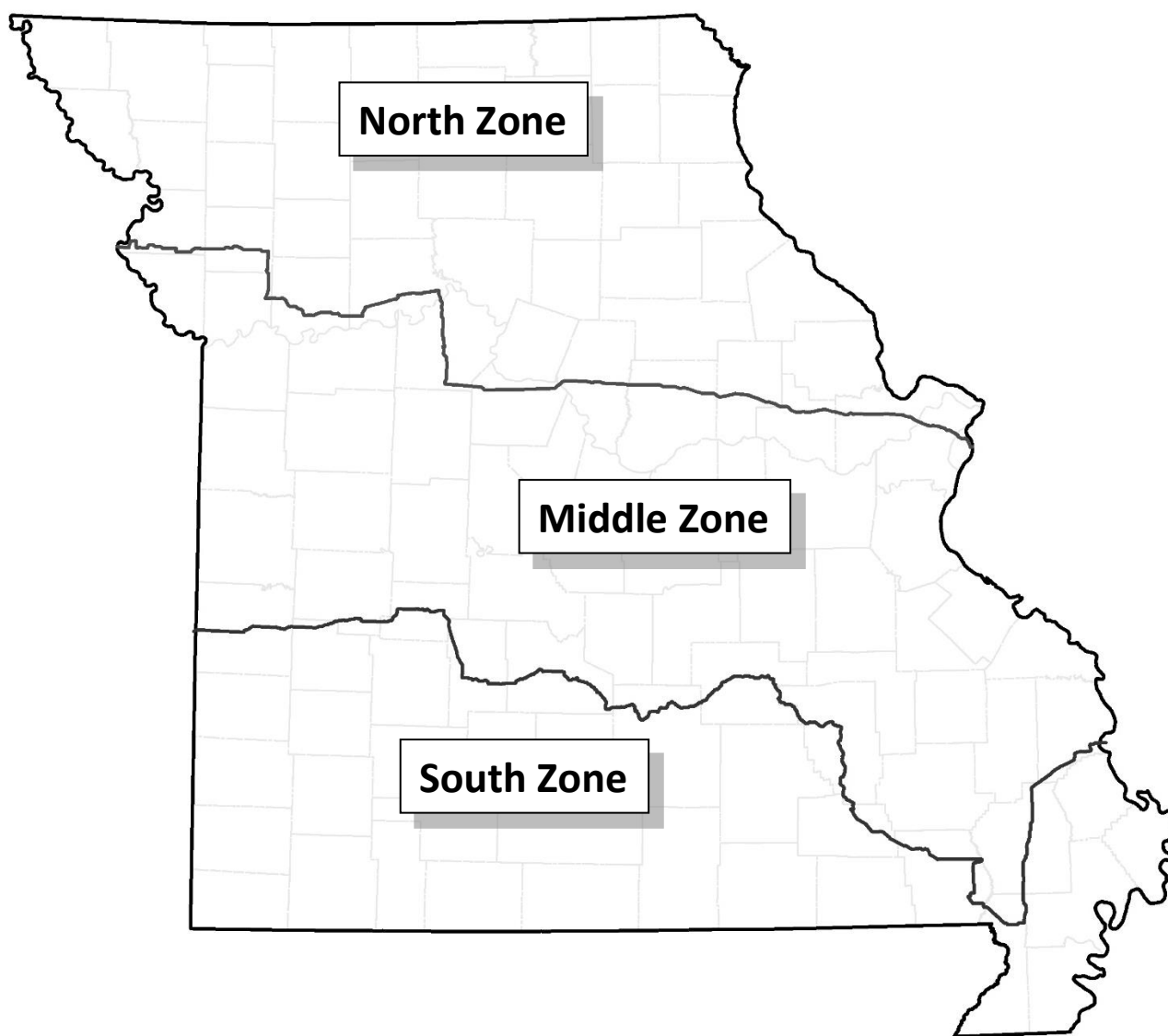


Figure 5. Proposed zone boundaries for the 2021-2025 seasons.

North Zone

(Excluding St. Charles Region and Dalton Bottoms Region)

Week Most Prefer to Hunt and Week Most Prefer a Split

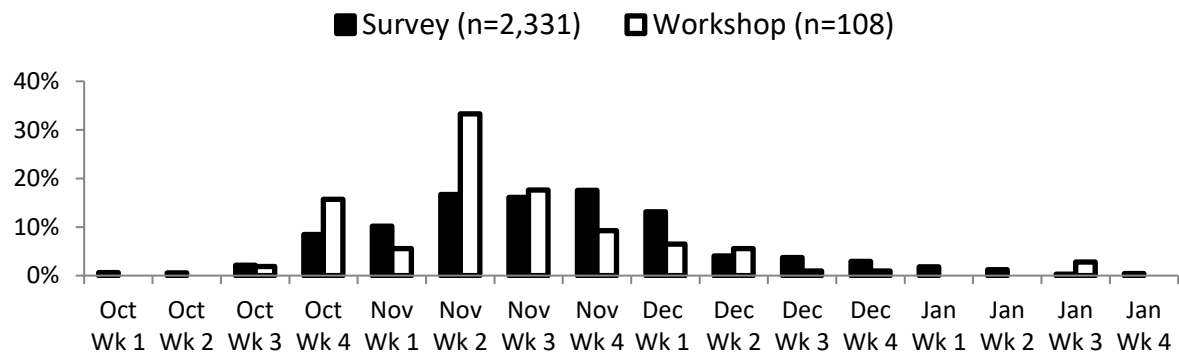


Figure 6. One week most preferred to hunt ducks by survey respondents and workshop participants in the North Zone.

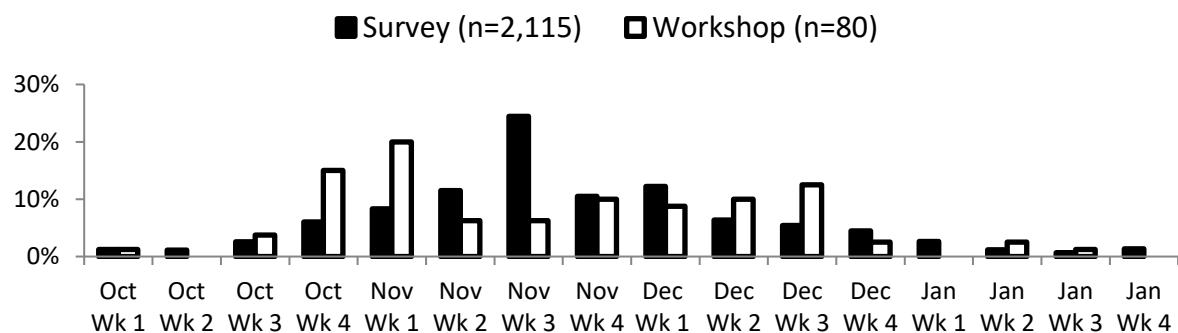


Figure 7. One week most preferred for a temporary closure by survey respondents and workshop participants in the North Zone.

Season Date Preferences

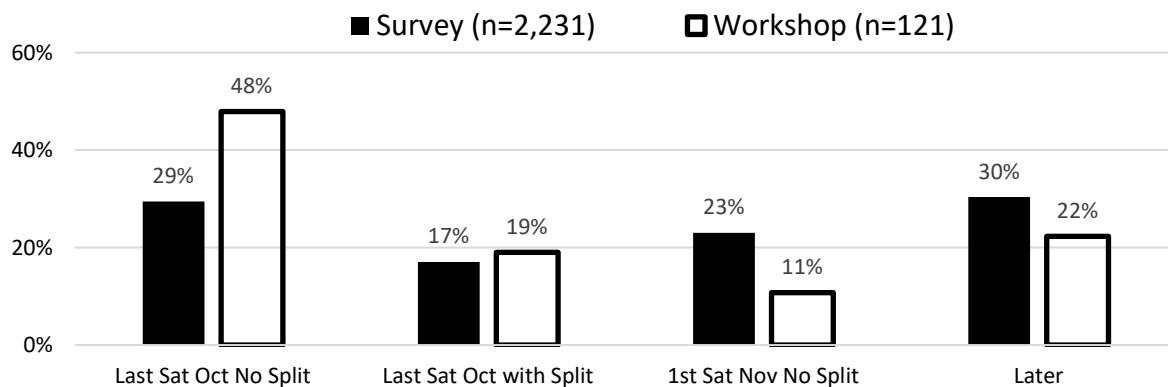


Figure 8. Season date preferences by survey respondents and workshop participants in the North Zone.

Middle Zone

Week Most Prefer to Hunt and Week Most Prefer a Split

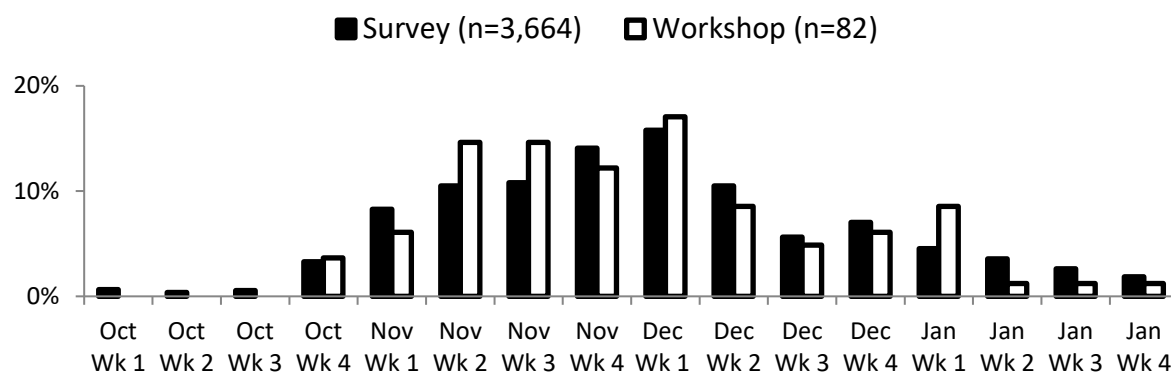


Figure 9. One week most preferred to hunt ducks by survey respondents and workshop participants in the Middle Zone.

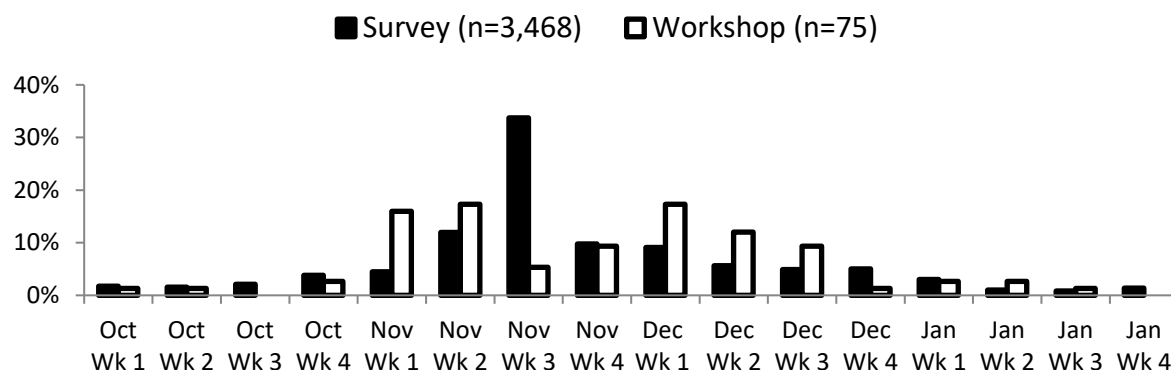


Figure 10. One week most preferred for a temporary closure by survey respondents and workshop participants in the Middle Zone.

Season Date Preferences

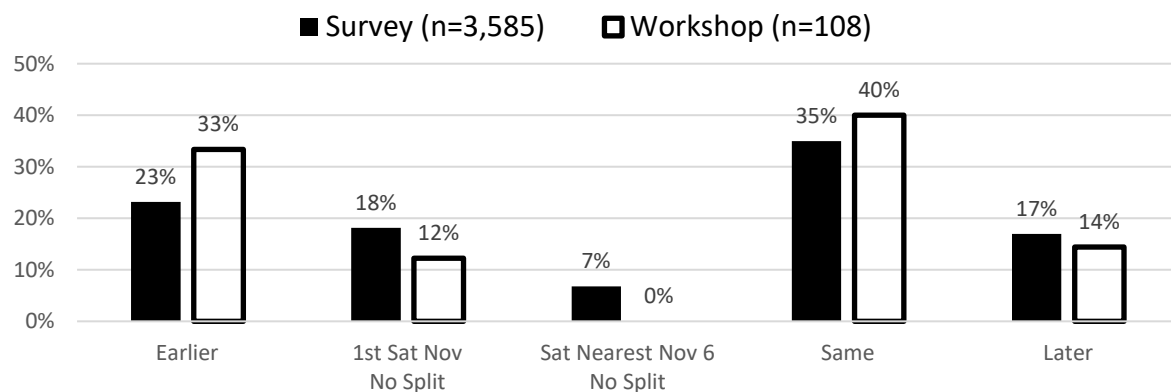


Figure 11. Season date preferences by web survey respondents and workshop participants in the Middle Zone.

South Zone

Week Most Prefer to Hunt and Week Most Prefer a Split

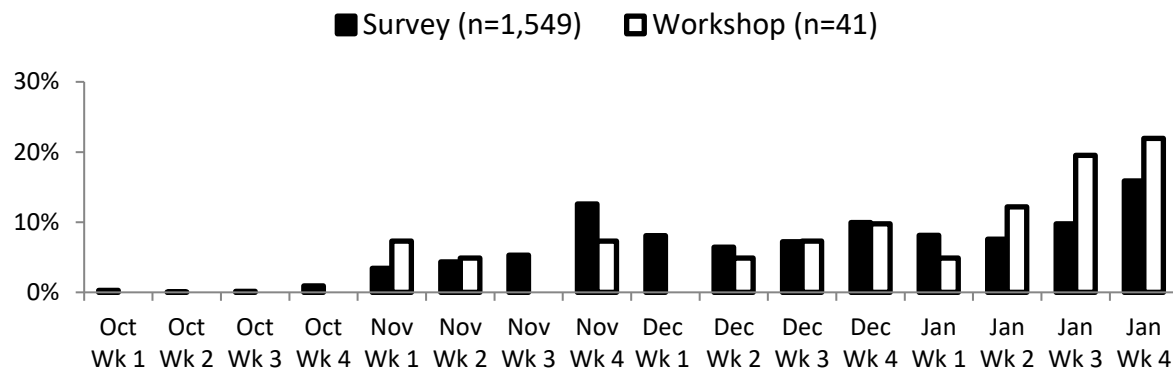


Figure 12. One week most preferred to hunt ducks by survey respondents and workshop participants in the South Zone.

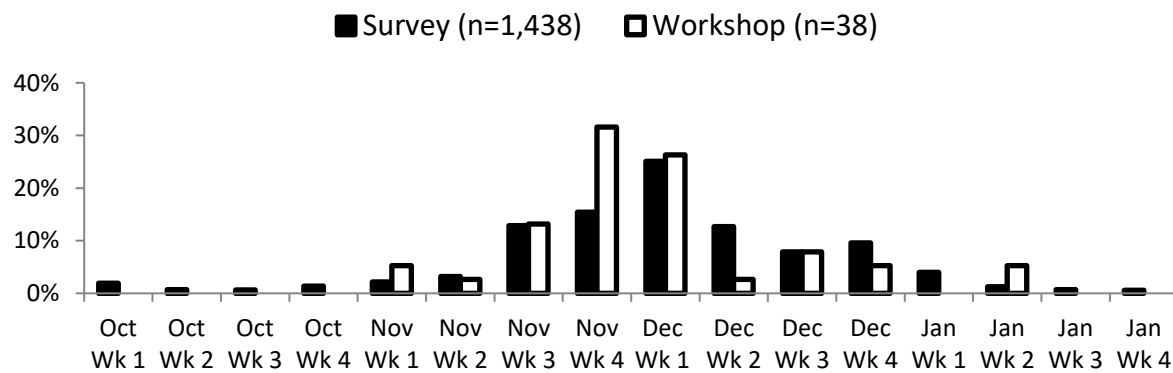


Figure 13. One week most preferred for a temporary closure by survey respondents and workshop participants in the South Zone.

Season Date Preferences

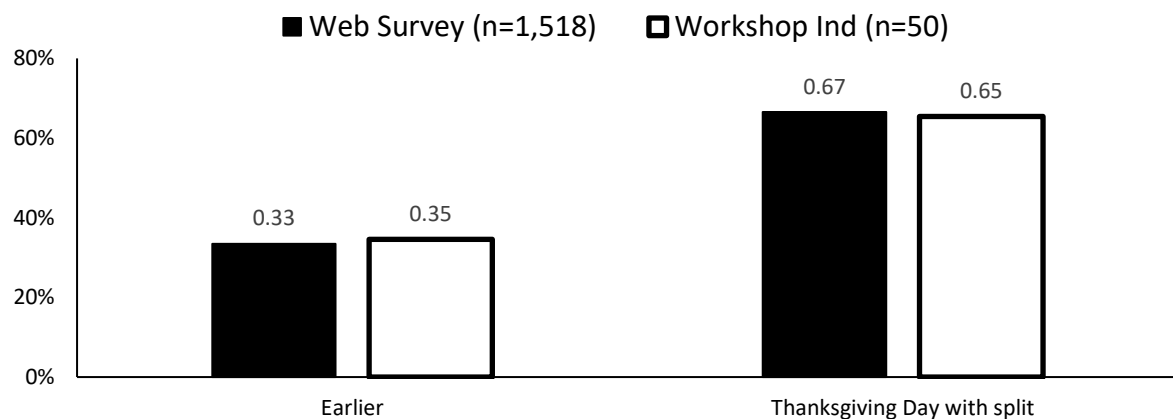
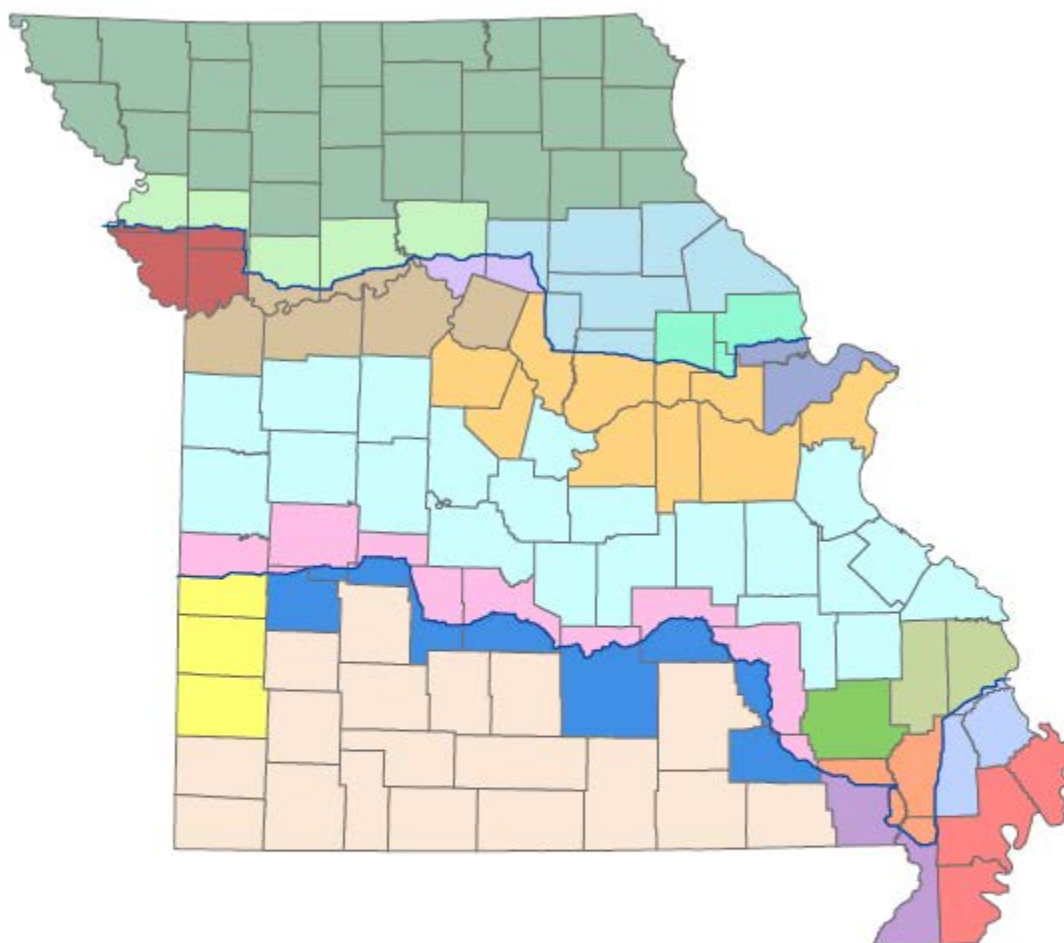


Figure 14. Season date preferences by web survey respondents and workshop participants in the South Zone.

Hunter Input Results by Region



2020 DuckRegions

 Barton	 Lincoln North	 North	 South Border Middle
 Bootheel	 Mark Twain	 North Border	 South Border South
 Bootheel Border	 Mingo Basin	 St Charles	 Stoddard East
 Central	 Mo River East	 Smithville	 Stoddard West
 Dalton Bottoms	 Mo River West	 South	 Wappapello

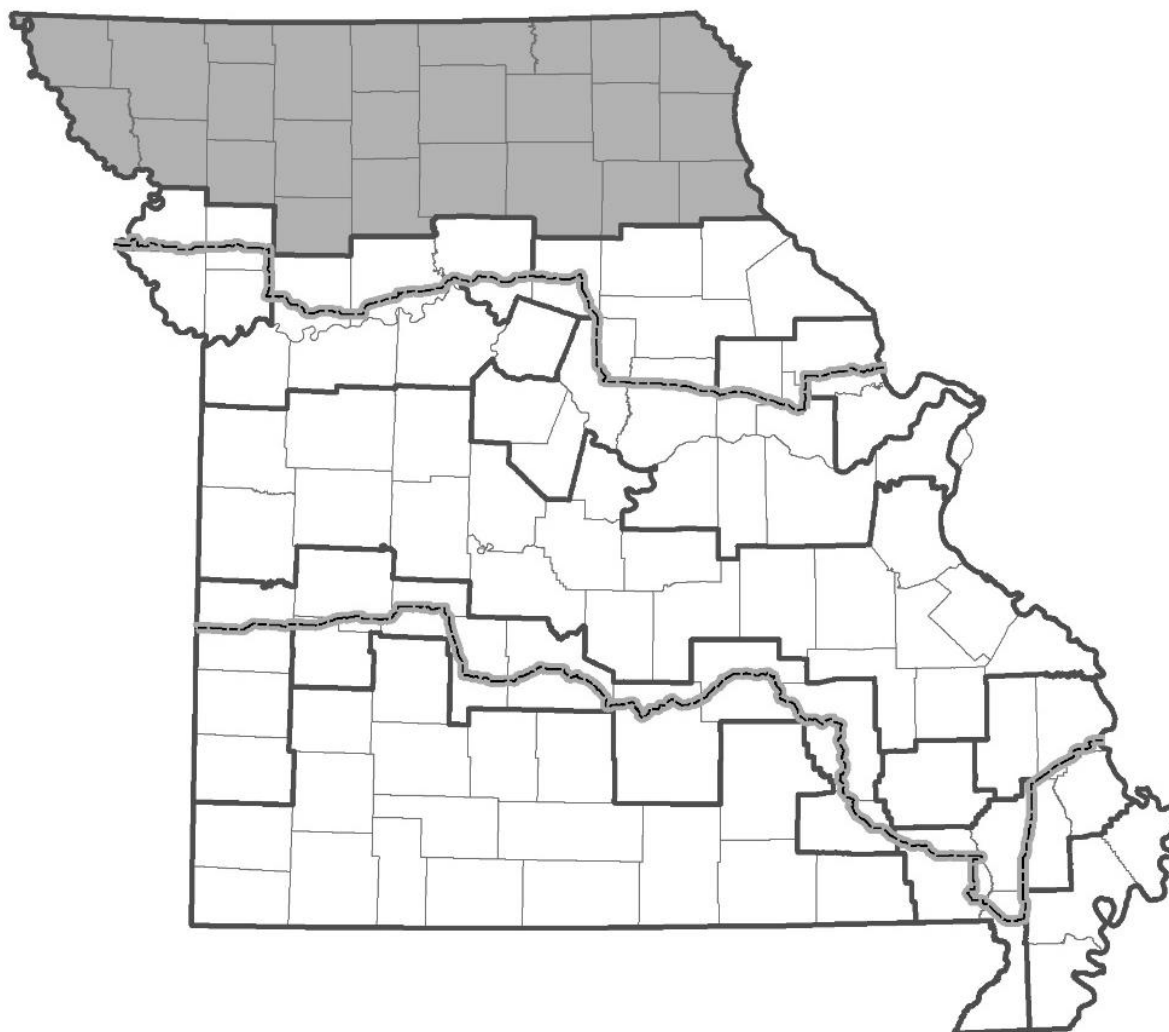
The nine weeks selected by the greatest percentage of survey respondents highlighted in gray for a 60-day season with no splits.

Zone	Region	Oct 1st Wk	Oct 2nd Wk	Oct 3rd Wk	Oct 4th Wk	Nov 1st Wk	Nov 2nd Wk	Nov 3rd Wk	Nov 4th Wk	Dec 1st Wk	Dec 2nd Wk	Dec 3rd Wk	Dec 4th Wk	Jan 1st Wk	Jan 2nd Wk	Jan 3rd Wk	Jan 4th Wk
North	North (n=973)	4%	7%	22%	57%	80%	93%	97%	100%	100%	96%	93%	78%	43%	20%	7%	3%
North	North Border (n=376)	3%	5%	16%	52%	77%	91%	95%	100%	100%	97%	95%	84%	48%	23%	9%	5%
North	Mark Twain (n=487)	2%	4%	14%	44%	72%	90%	96%	100%	100%	98%	96%	86%	56%	28%	10%	4%
North	Lincoln North (n=209)	0%	2%	19%	56%	78%	90%	94%	100%	100%	100%	98%	81%	44%	22%	10%	6%
Middle	Dalton Bottoms (n=51)	2%	4%	20%	59%	84%	92%	96%	100%	100%	98%	96%	80%	41%	16%	8%	4%
Middle	St Charles (n=831)	1%	3%	8%	30%	68%	85%	93%	100%	100%	99%	97%	92%	70%	32%	15%	7%
Middle	Smithville (n=189)	2%	2%	7%	24%	50%	71%	86%	100%	100%	98%	98%	93%	76%	50%	29%	14%
Middle	MO River West (n=405)	1%	2%	10%	33%	59%	80%	89%	100%	100%	99%	98%	90%	67%	41%	20%	11%
Middle	MO River East (n=360)	3%	6%	14%	35%	56%	73%	86%	100%	100%	97%	94%	86%	65%	44%	28%	14%
Middle	Central (n=947)	1%	2%	6%	18%	40%	64%	81%	100%	100%	99%	98%	94%	82%	60%	36%	19%
Middle	S Border - Middle (n=518)	1%	2%	3%	14%	37%	68%	83%	100%	100%	99%	98%	97%	86%	63%	32%	17%
Middle	Wappapello (n=80)	0%	1%	14%	48%	66%	79%	88%	100%	100%	100%	99%	86%	53%	34%	21%	13%
Middle	Mingo Basin (n=269)	1%	2%	6%	16%	37%	53%	71%	100%	100%	99%	98%	94%	84%	63%	47%	29%
Middle	Stoddard West (n=450)	1%	1%	4%	10%	31%	53%	74%	100%	100%	99%	99%	96%	90%	69%	47%	26%
South	Stoddard East (n=60)	0%	0%	2%	7%	23%	35%	52%	100%	100%	100%	100%	98%	93%	77%	65%	48%
South	Bootheel Border (n=297)	0%	0%	0%	2%	5%	13%	30%	100%	100%	100%	100%	100%	98%	95%	87%	70%
South	Bootheel (n=535)	0%	0%	1%	1%	6%	15%	28%	100%	100%	100%	100%	99%	99%	94%	85%	72%
South	Barton (n=125)	2%	2%	2%	2%	9%	17%	24%	100%	100%	98%	98%	98%	98%	91%	83%	76%
South	S Border - South (n=23)	4%	4%	9%	13%	17%	35%	43%	100%	100%	96%	96%	91%	87%	83%	65%	57%
South	South (n=279)	1%	1%	3%	6%	15%	25%	33%	100%	100%	99%	99%	97%	94%	85%	75%	67%

The nine weeks selected by the greatest percentage of survey respondents highlighted in gray for a 60-day season that includes one split.

(Light gray indicates weeks tied for the 9th)

Zone	Region	Oct 1st Wk	Oct 2nd Wk	Oct 3rd Wk	Oct 4th Wk	Nov 1st Wk	Nov 2nd Wk	Nov 3rd Wk	Nov 4th Wk	Dec 1st Wk	Dec 2nd Wk	Dec 3rd Wk	Dec 4th Wk	Jan 1st Wk	Jan 2nd Wk	Jan 3rd Wk	Jan 4th Wk
North	North (n=821)	5%	12%	35%	64%	80%	85%	75%	83%	83%	91%	89%	81%	64%	35%	13%	5%
North	North Border (n=335)	5%	10%	26%	60%	81%	86%	67%	83%	82%	93%	91%	84%	69%	39%	17%	6%
North	Mark Twain (n=451)	2%	7%	25%	63%	82%	85%	63%	78%	86%	93%	90%	88%	75%	42%	14%	5%
North	Lincoln North (n=180)	3%	8%	37%	67%	84%	85%	66%	86%	79%	91%	91%	87%	67%	34%	12%	3%
Middle	Dalton Bottoms (n=49)	2%	4%	35%	65%	76%	80%	65%	96%	88%	86%	88%	88%	69%	33%	16%	10%
Middle	St Charles (n=744)	3%	5%	15%	41%	76%	84%	64%	86%	86%	90%	91%	89%	83%	59%	21%	7%
Middle	Smithville (n=172)	4%	6%	16%	42%	60%	83%	60%	77%	89%	93%	91%	90%	85%	60%	33%	10%
Middle	MO River West (n=345)	3%	6%	22%	48%	70%	80%	61%	79%	88%	92%	93%	91%	81%	54%	24%	8%
Middle	MO River East (n=302)	5%	8%	21%	45%	73%	79%	57%	79%	85%	89%	87%	88%	81%	61%	30%	12%
Middle	Central (n=818)	3%	4%	11%	31%	60%	77%	55%	78%	85%	92%	93%	91%	86%	74%	44%	17%
Middle	South Border - Middle (n=454)	1%	2%	7%	25%	58%	75%	61%	79%	88%	94%	94%	89%	91%	78%	43%	16%
Middle	Wappapello (n=73)	1%	3%	21%	60%	74%	85%	77%	88%	88%	90%	84%	78%	79%	42%	21%	10%
Middle	Mingo Basin (n=230)	2%	3%	9%	27%	50%	69%	66%	75%	84%	90%	91%	93%	89%	75%	53%	26%
Middle	Stoddard West (n=383)	1%	2%	4%	17%	47%	72%	71%	74%	78%	88%	92%	90%	95%	84%	58%	27%
South	Stoddard East (n=55)	2%	5%	7%	13%	29%	58%	62%	62%	78%	91%	96%	93%	89%	91%	75%	49%
South	Bootheel Border (n=244)	2%	2%	2%	4%	11%	30%	87%	71%	68%	85%	91%	86%	94%	95%	93%	81%
South	Bootheel (n=437)	0%	0%	2%	3%	13%	31%	91%	68%	69%	87%	90%	87%	96%	96%	90%	77%
South	Barton (n=99)	3%	2%	4%	7%	21%	35%	75%	74%	67%	80%	92%	89%	94%	97%	89%	72%
South	South Border - South (n=18)	0%	0%	6%	17%	28%	39%	78%	56%	78%	89%	89%	89%	100%	89%	72%	72%
South	South (n=214)	4%	5%	6%	14%	31%	45%	69%	67%	70%	86%	89%	90%	93%	91%	78%	63%

North Region

North Region - Week Most Prefer to Hunt and Week Most Prefer a Split

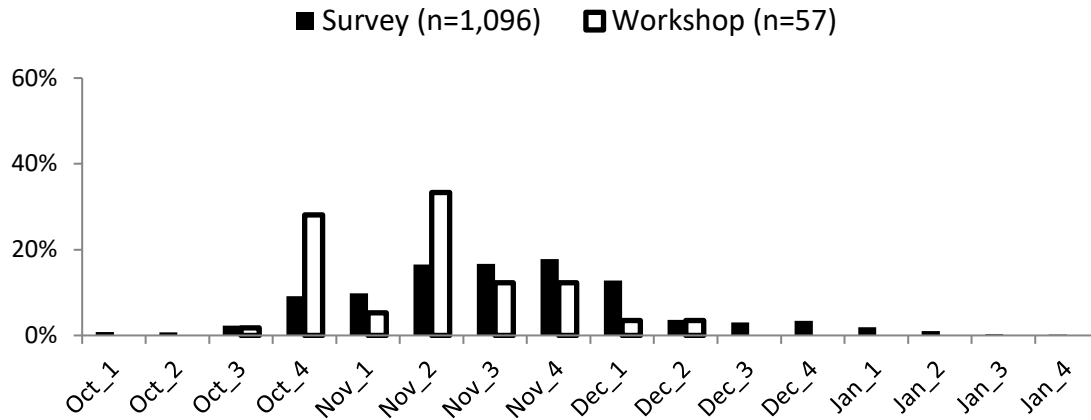


Figure 15. One week most preferred to hunt ducks by web survey respondents and workshop participants in the North Region.

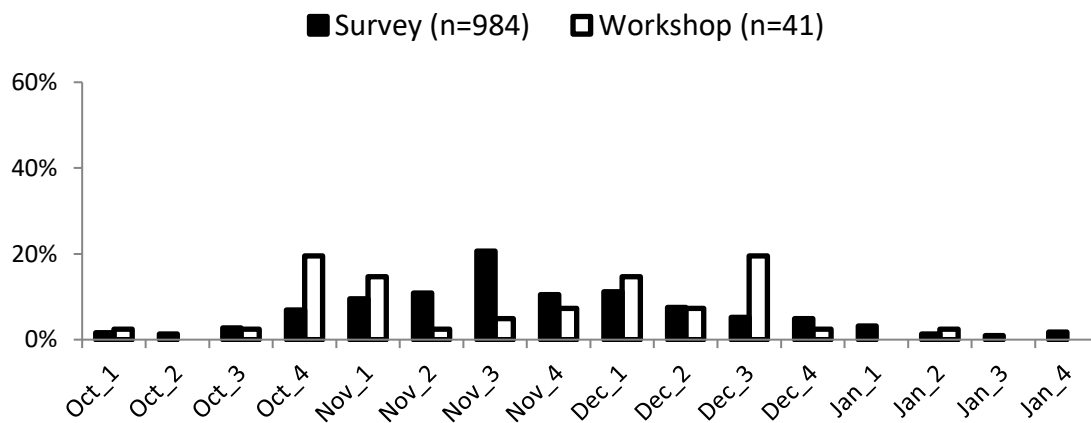


Figure 16. One week that web survey respondents and workshop participants from the North Region would prefer a temporary closure in duck season.

North Region – Season Date Preferences

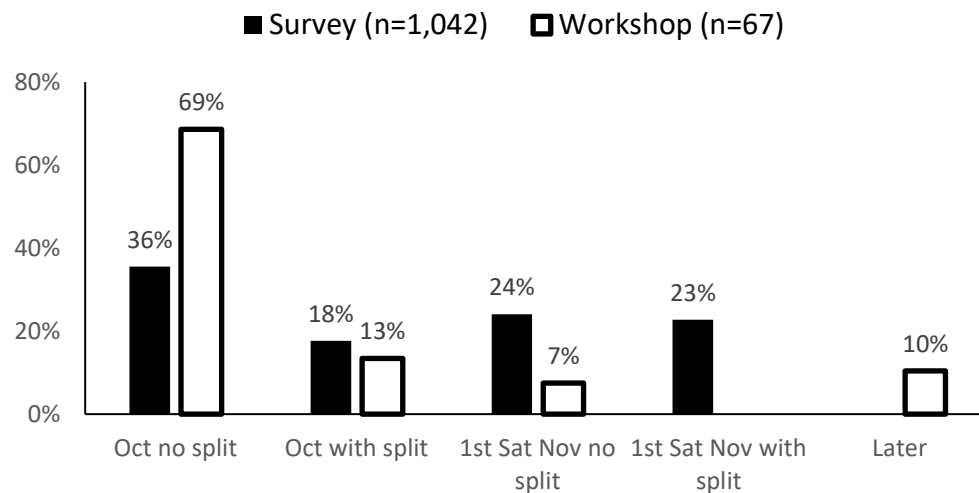


Figure 17. Season date preferences of web survey respondents and workshop participants in the North Region.

Workshop Small Groups (Northwest, also see North Border Region)

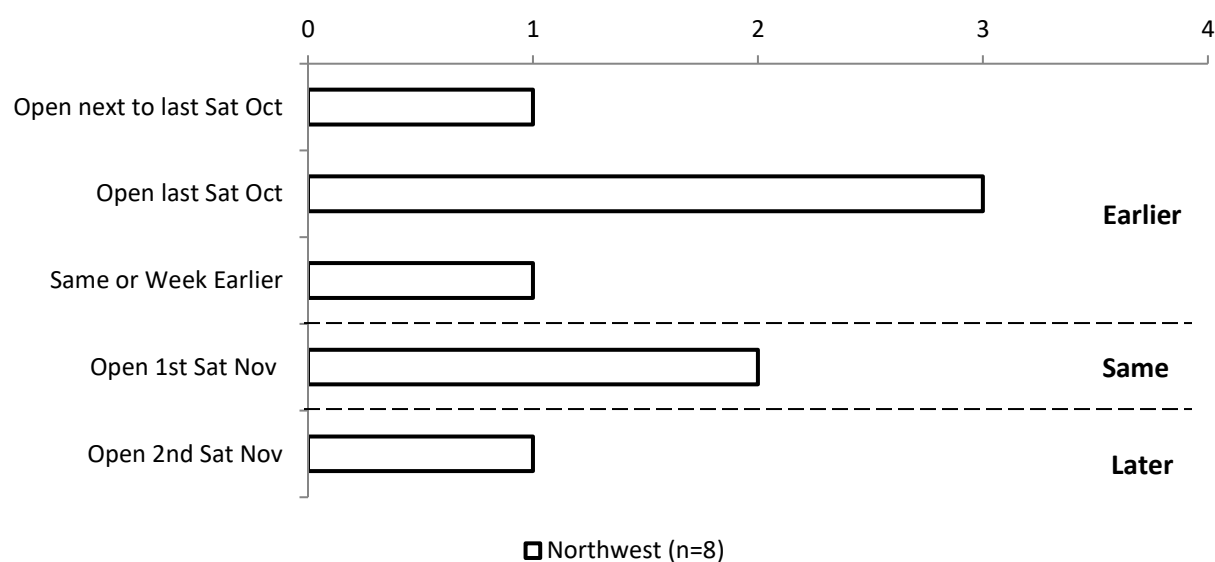


Figure 18. Sixty-day season date preferences for workshop small group participants from northwest Missouri.

North Border Region

North Border Region - Week Most Prefer to Hunt and Week Most Prefer a Split

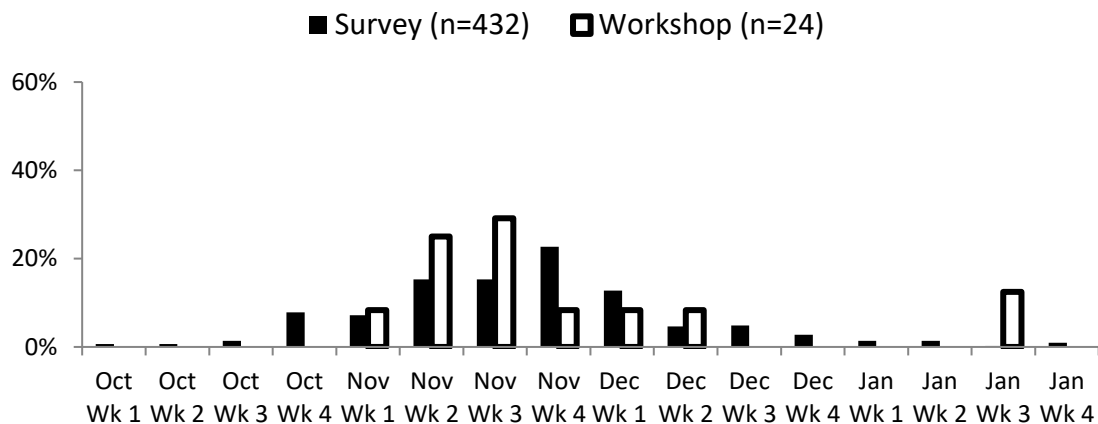


Figure 19. One week most preferred to hunt ducks by web survey respondents and workshop participants in the North Border Region.

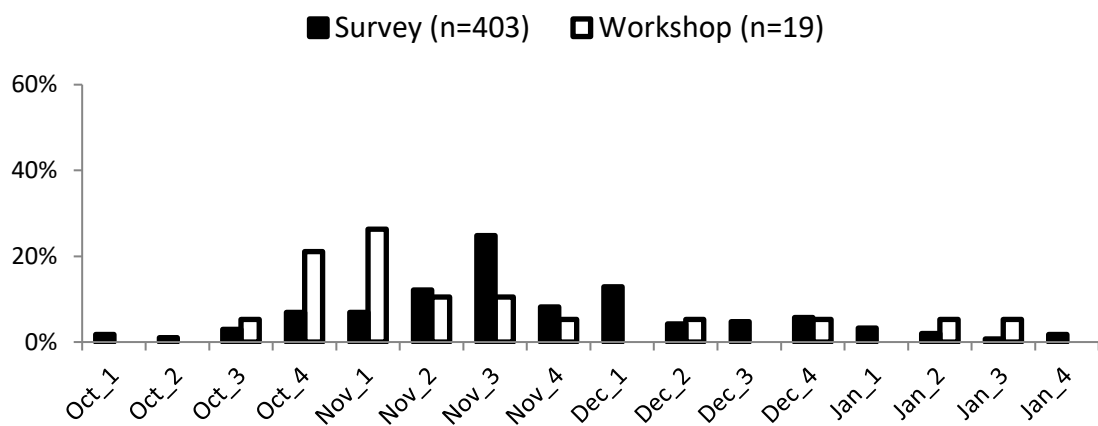


Figure 20. One week that web survey respondents and workshop participants from the North Border Region would prefer a temporary closure in duck season.

North Border Region – Season Date Preferences

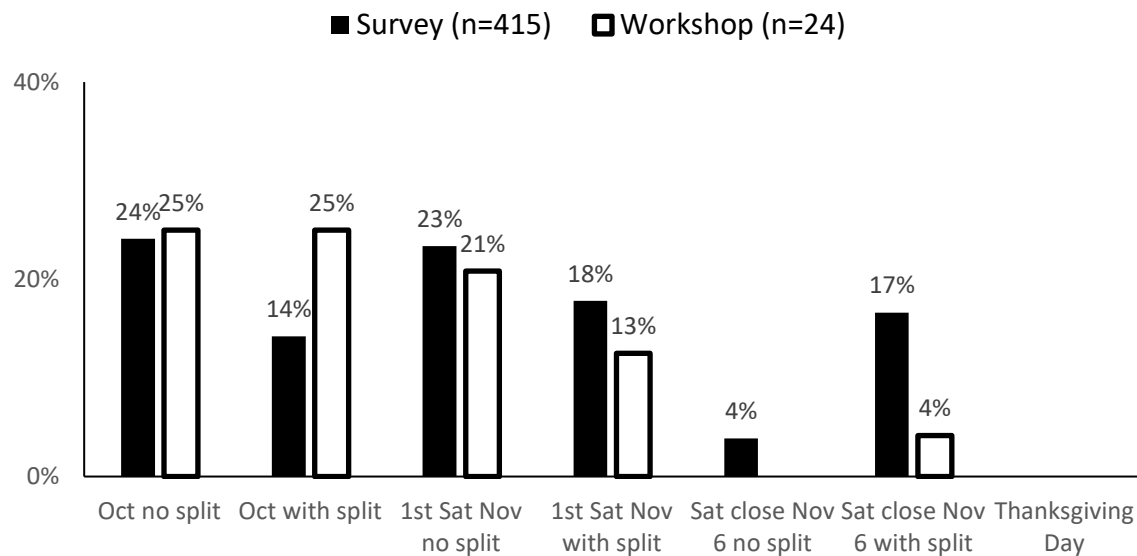


Figure 21. Season date preferences by web survey respondents and workshop participants from the North Border - North Region.

Workshop Small Groups (North Central, also see North Region)

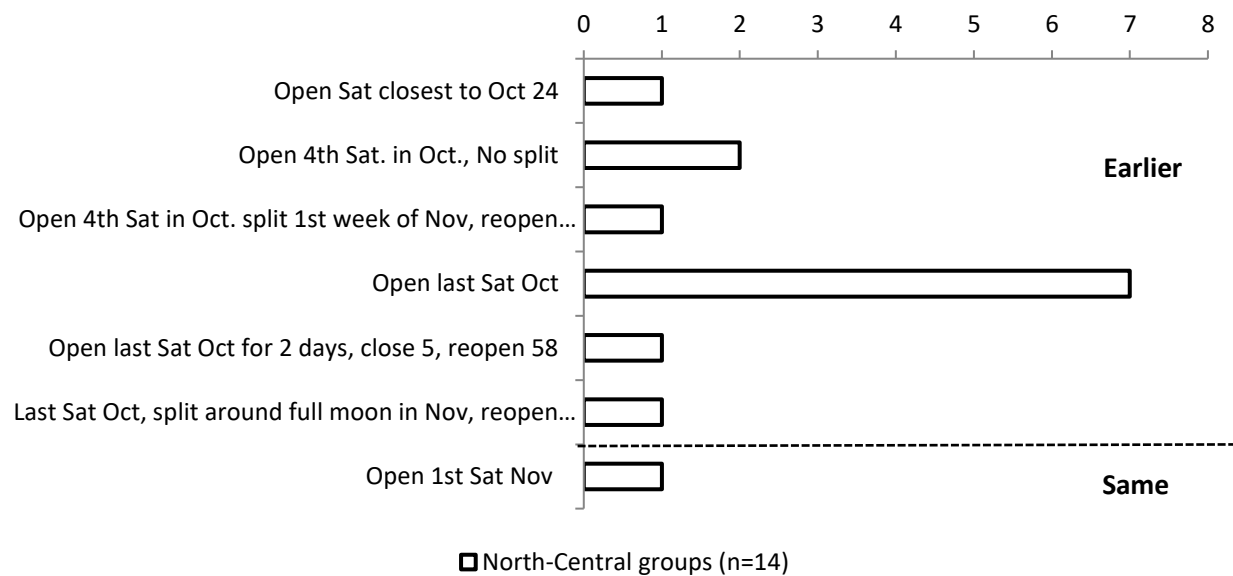
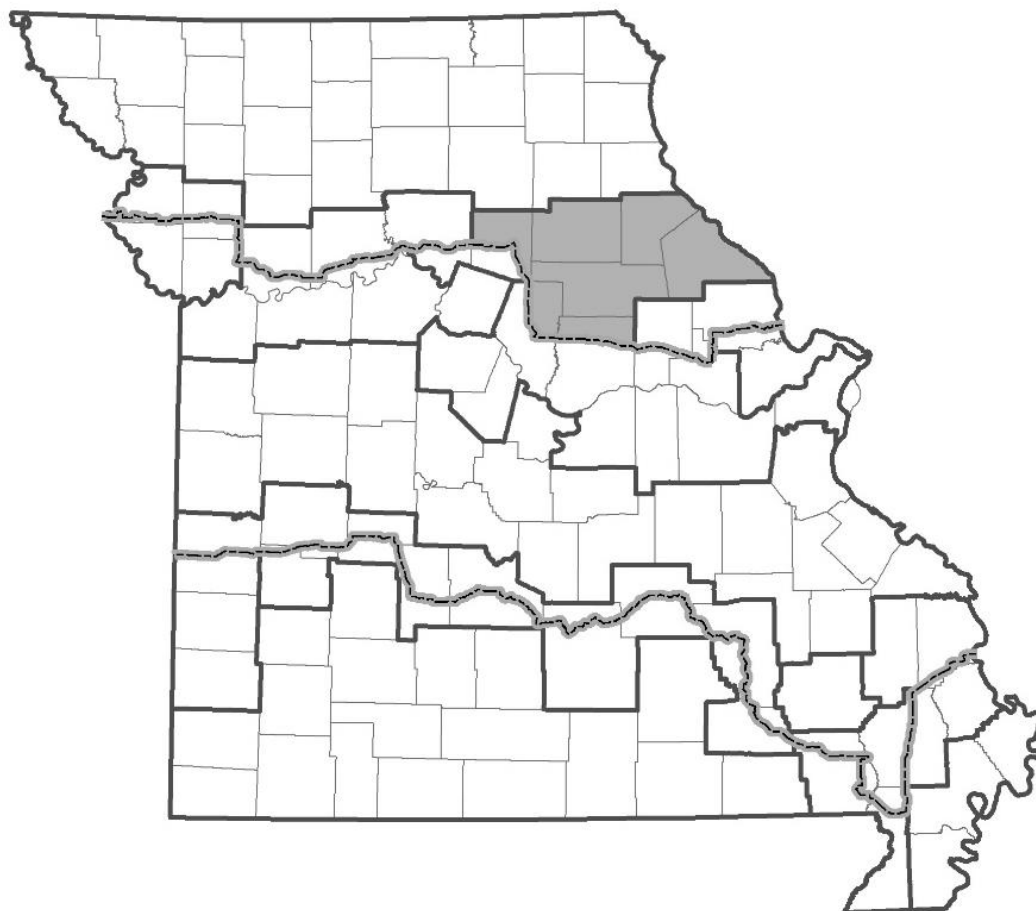


Figure 22. Sixty-day season date preferences for workshop small group participants from north-central Missouri.

Mark Twain Region



Mark Twain Region - Week Most Prefer to Hunt and Week Most Prefer a Split

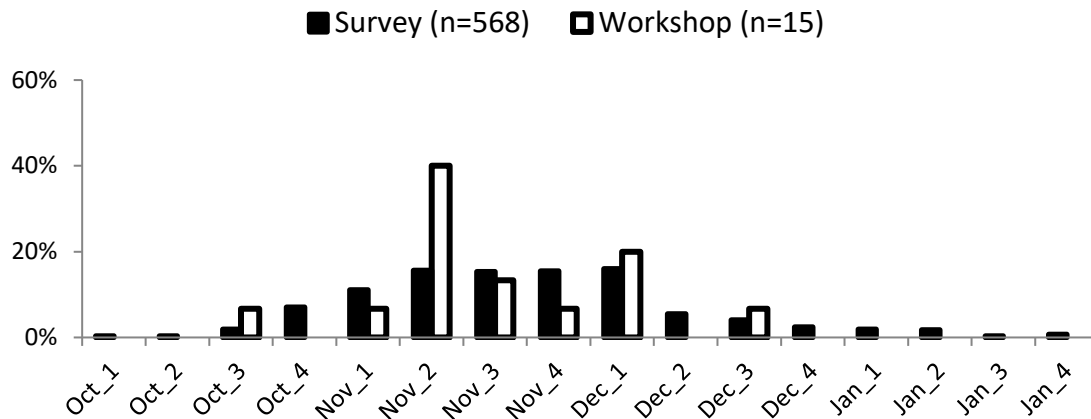


Figure 23. One week most preferred to hunt ducks by web survey respondents and workshop participants in the Mark Twain Region.

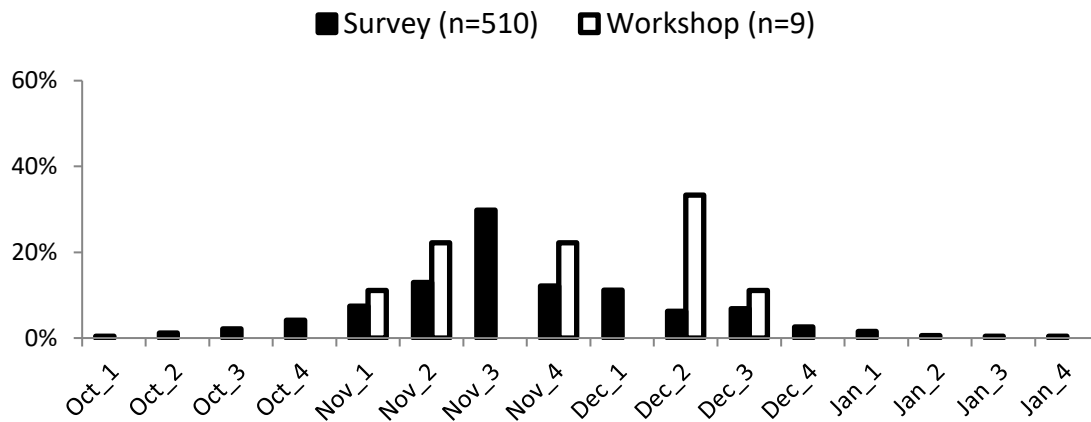


Figure 24. One week that web survey respondents and workshop participants from the Mark Twain Region would prefer a temporary closure in duck season.

Mark Twain Region – Season Date Preferences

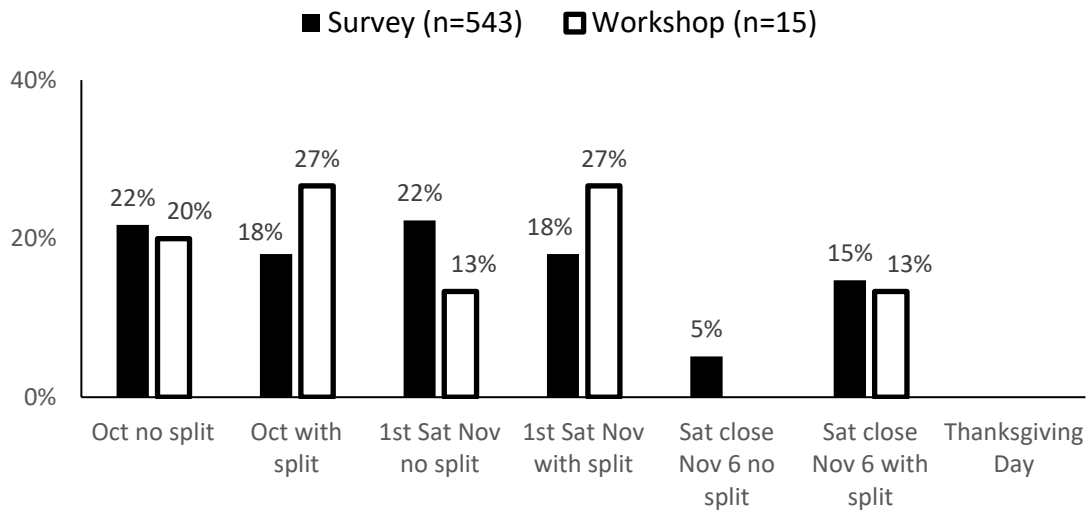


Figure 25. Season date preferences by web survey respondents and workshop participants in the Mark Twain Region.

Workshop Small Groups

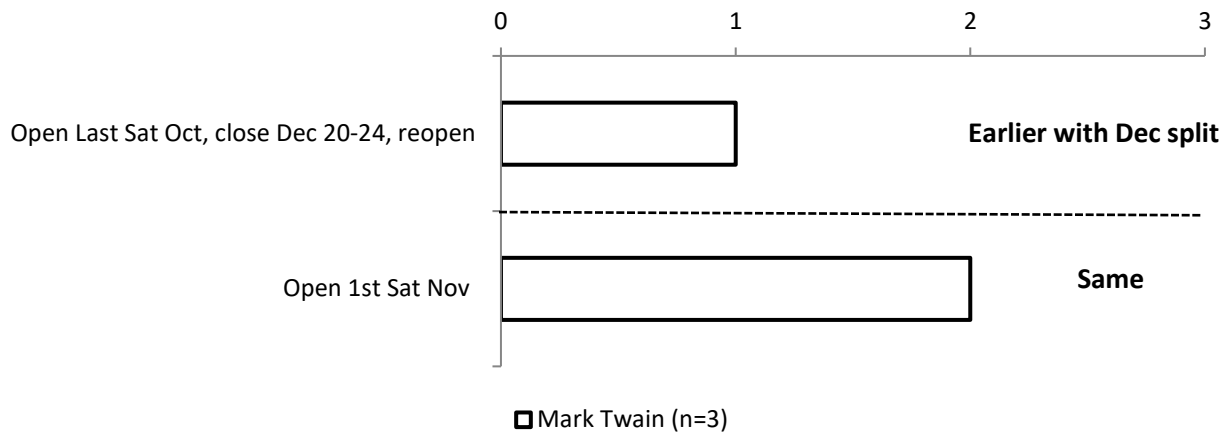


Figure 26. Sixty-day season date preferences for workshop small group participants in the Mark Twain Region.

Lincoln North Region

Lincoln North Region - Week Most Prefer to Hunt and Week Most Prefer a Split

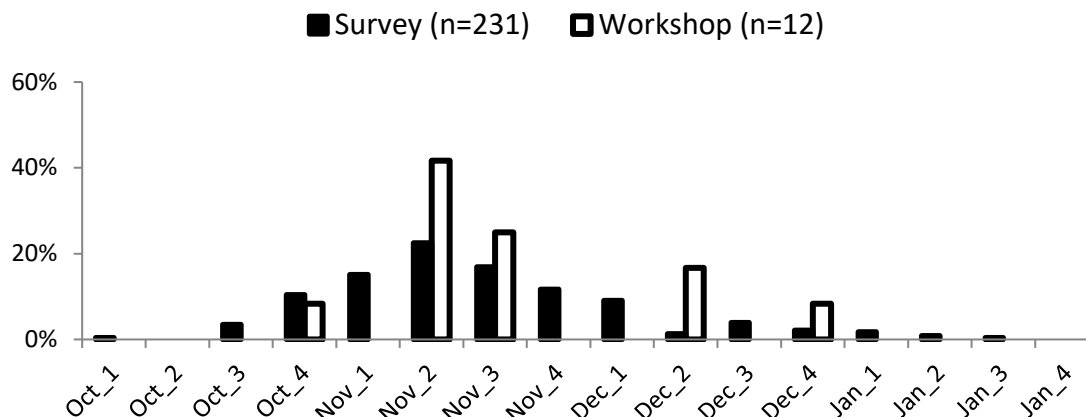


Figure 27. One week most preferred to hunt ducks by web survey respondents and workshop participants in the Lincoln - North Region.

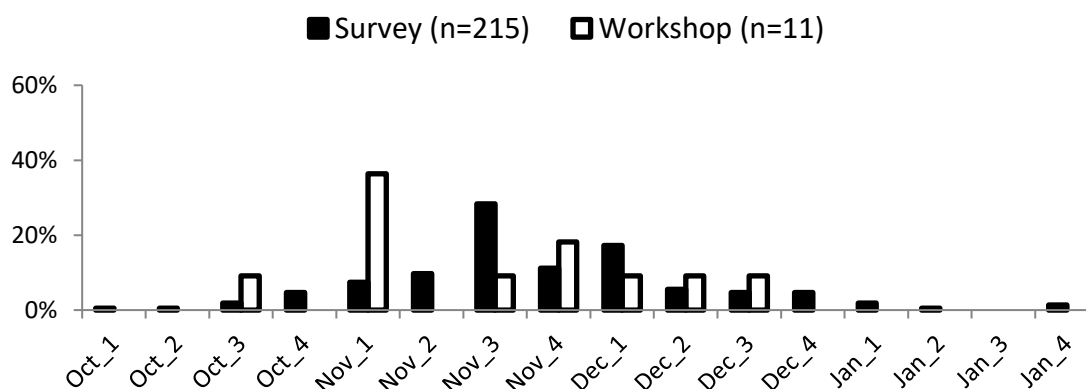


Figure 28. One week that web survey respondents and workshop participants from the Lincoln - North Region would prefer a temporary closure in duck season.

Lincoln North Region – Season Date Preferences

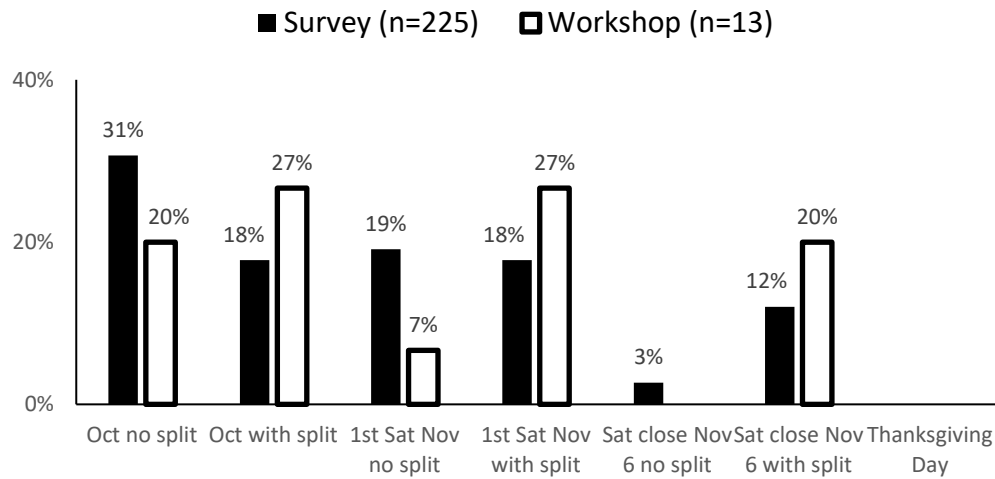


Figure 29. Season date preferences of web survey respondents and workshop participants in the Lincoln - North Region.

Workshop Small Groups

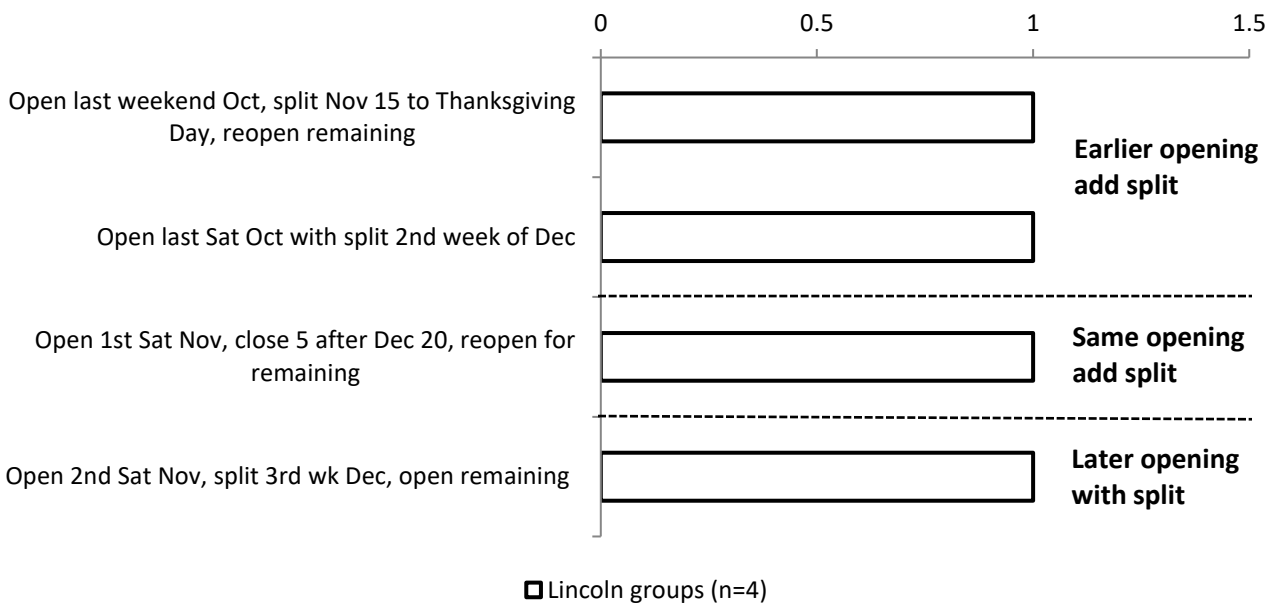


Figure 30. Sixty-day season date preferences for workshop small group participants from the Lincoln - North Region.

Smithville Region



Smithville Region - Week Most Prefer to Hunt and Week Most Prefer a Split

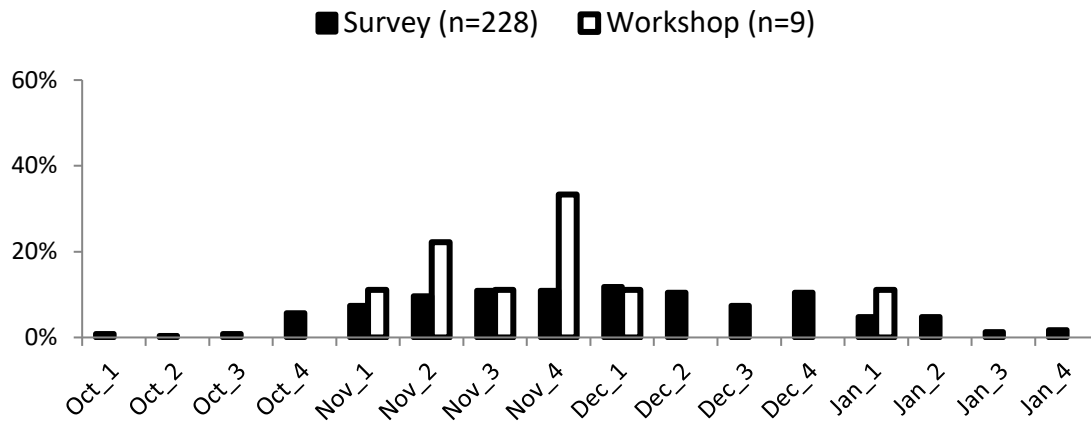


Figure 31. One week most preferred to hunt ducks by web survey respondents and workshop participants in the Smithville Region.

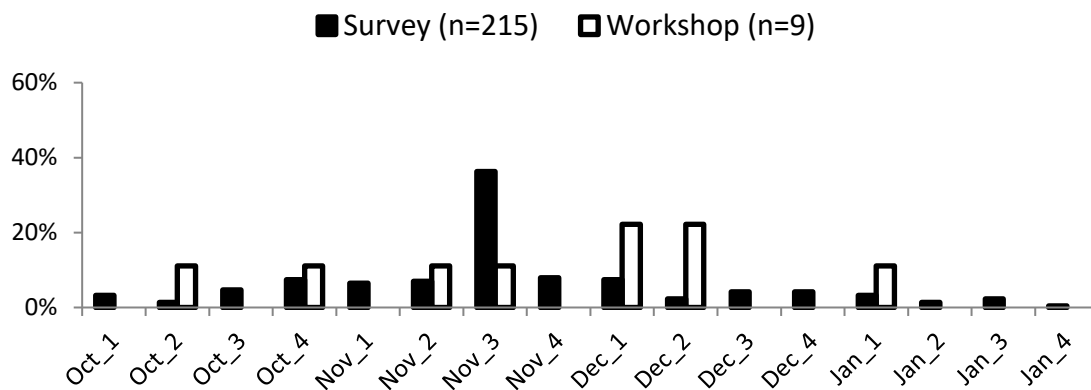


Figure 32. One week that web survey respondents and workshop participants from the Smithville Region would prefer a temporary closure in the duck season.

Smithville Region – Season Date Preferences

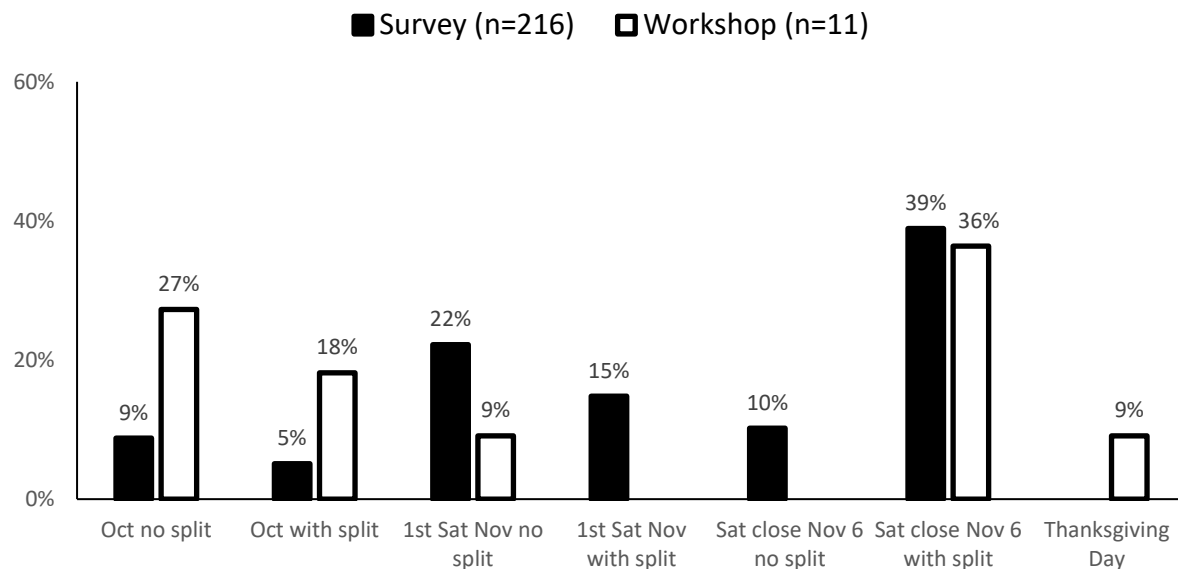
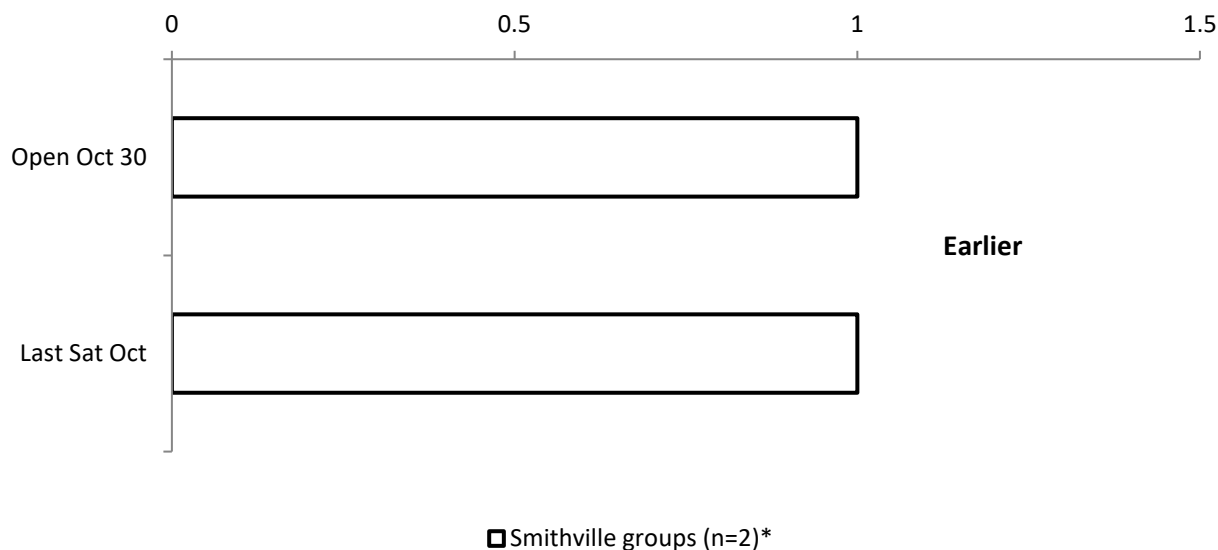


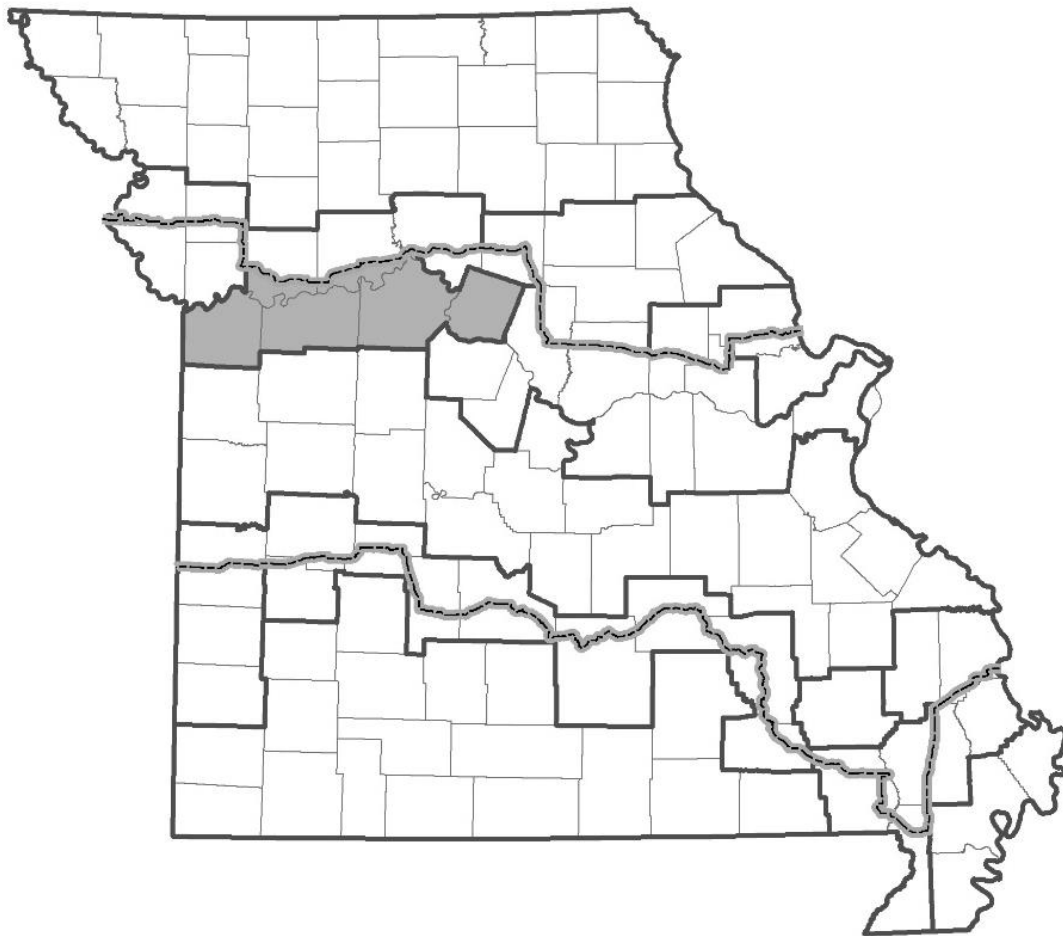
Figure 33. Season date preferences by web survey respondents and workshop participants in the Smithville Region.

Workshop Small Groups



*One of these groups also focused on the Missouri River West Region. To avoid counting this group twice, they were only included in this region

Figure 34. Sixty-day season date preferences for workshop small group participants from the Smithville Region.

Missouri River West Region

Missouri River West Region - Week Most Prefer to Hunt and Week Most Prefer a Split

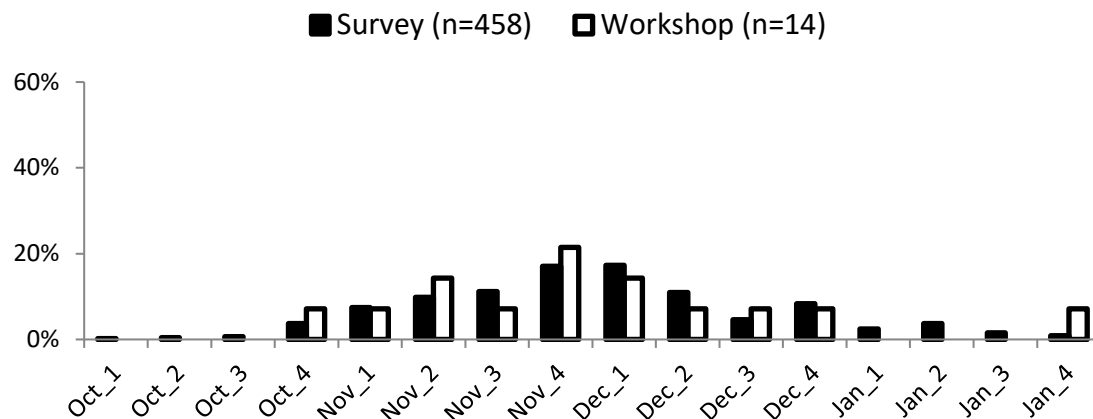


Figure 35. One week most preferred to hunt ducks by web survey respondents and workshop participants in the Missouri River West Region.

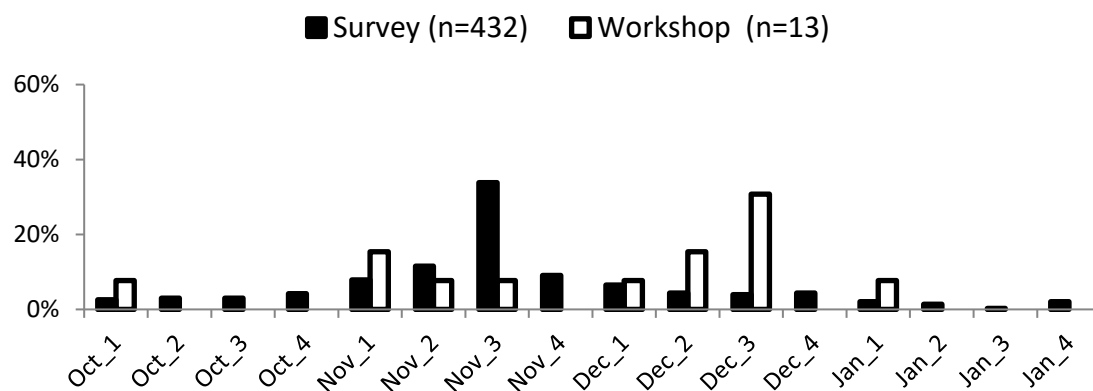


Figure 36. One week that web survey respondents and workshop participants from the Missouri River West Region would prefer a temporary closure in the duck season.

Missouri River West Region – Season Date Preferences

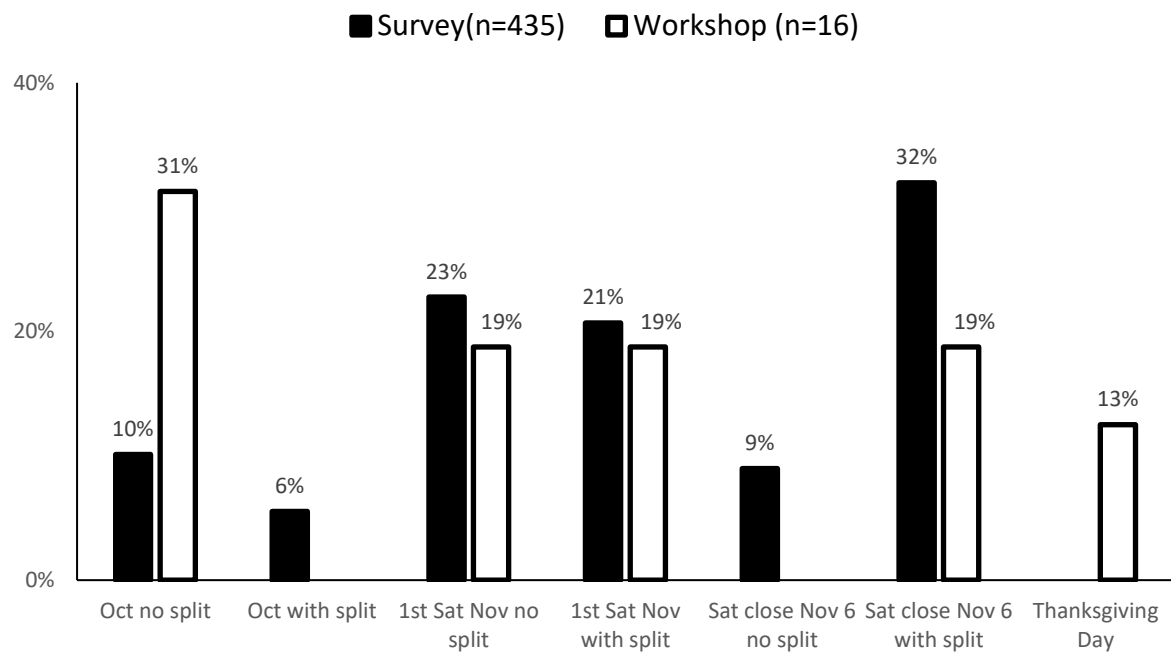


Figure 37. Season date preferences by web survey respondents and workshop participants in the Missouri River West Region.

Workshop Small Groups

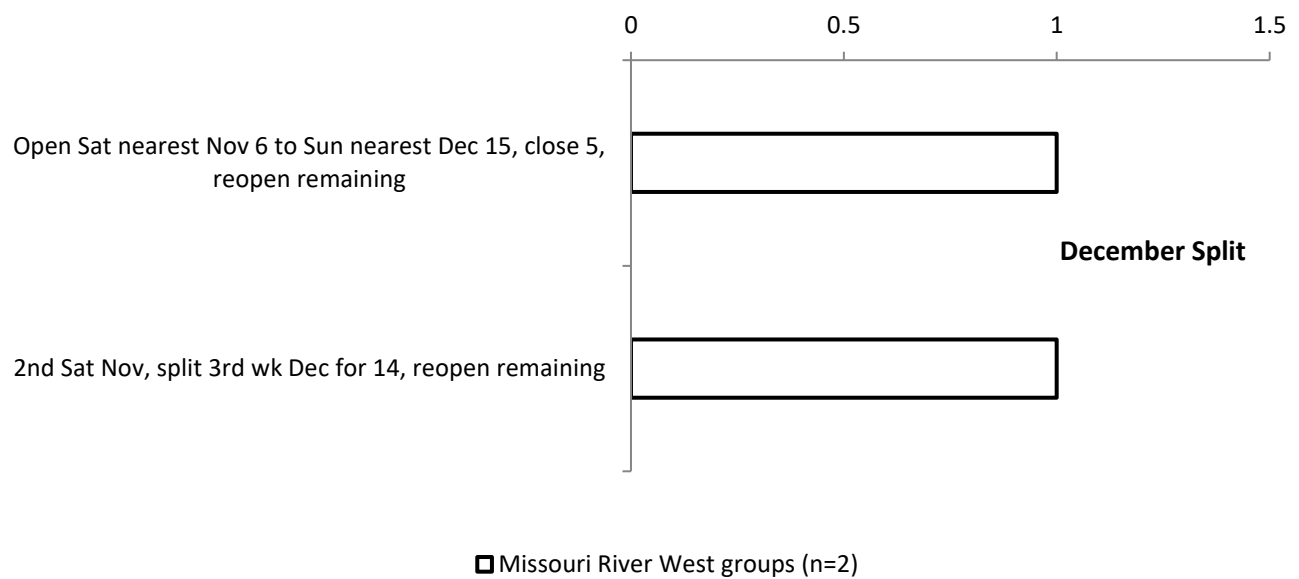


Figure 38. Sixty-day season date preferences for workshop small group participants from the Missouri River West Region.

Dalton Bottoms Region



Dalton Bottoms - Week Most Prefer to Hunt and Week Most Prefer a Split

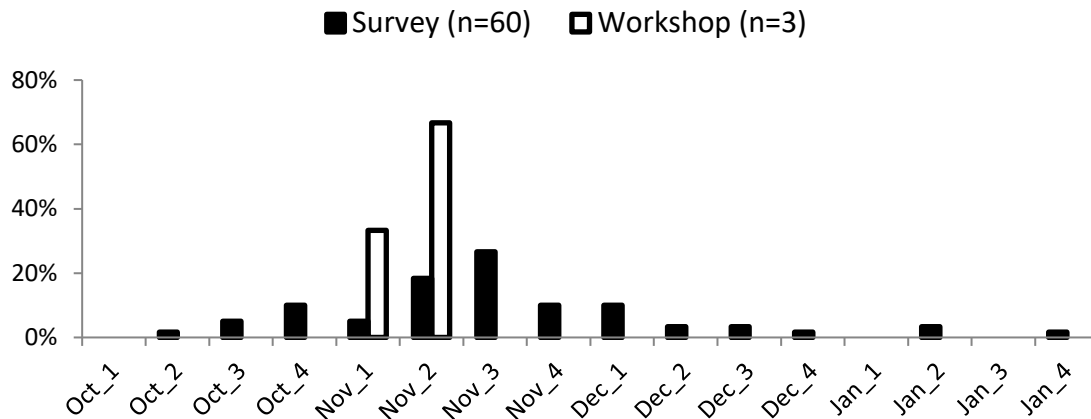


Figure 39. One week most preferred to hunt ducks by web survey respondents and workshop participants in the Dalton Bottoms Region.

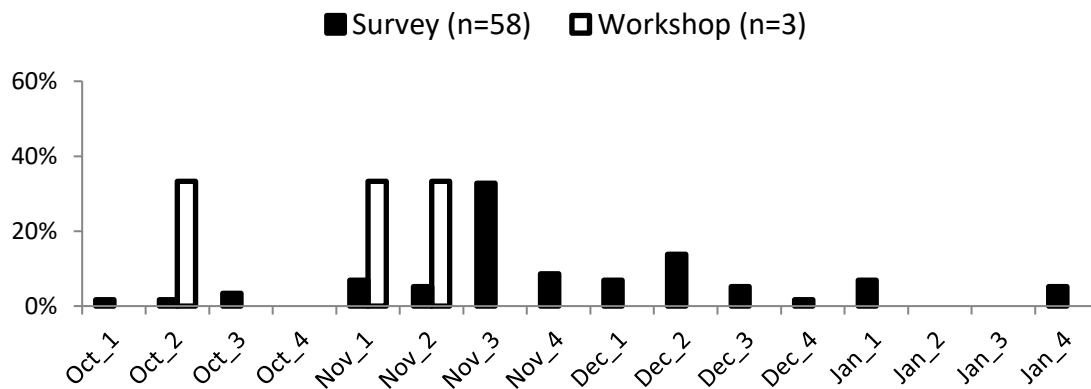


Figure 40. One week that web survey respondents and workshop participants from the Dalton Bottoms Region would prefer a temporary closure in duck season.

Dalton Bottoms Region – Season Date Preferences

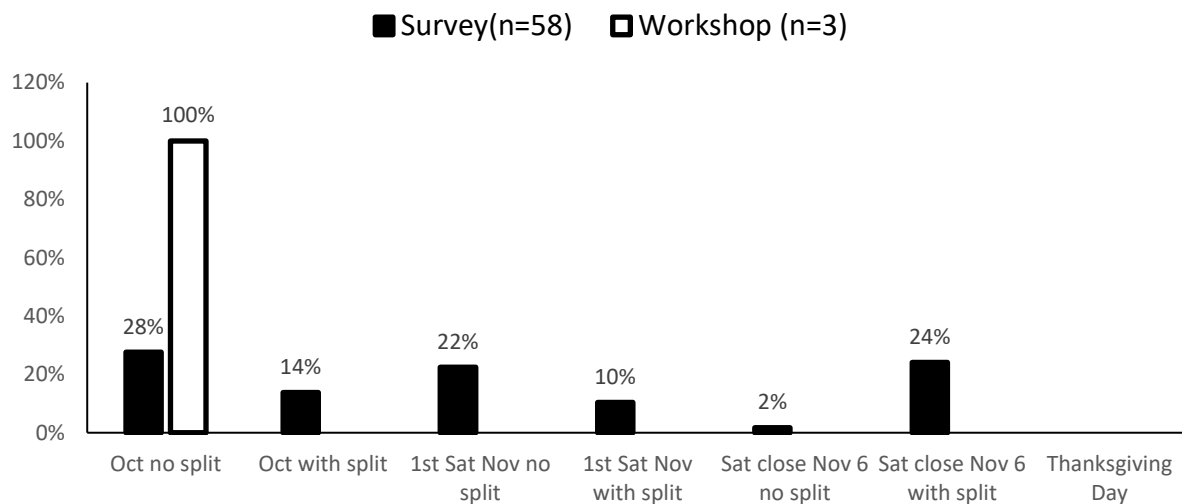


Figure 41. Season date preferences by web survey respondents and workshop participants in the Dalton Bottoms Region.

Workshop Small Groups

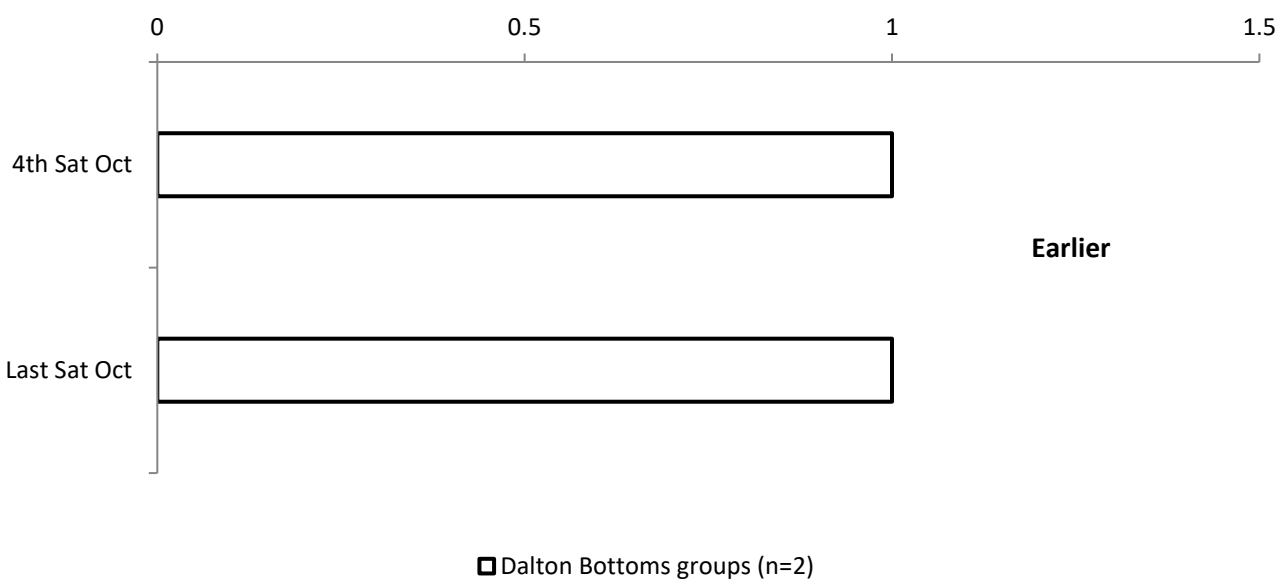


Figure 42. Sixty-day season date preferences for workshop small group participants from the Dalton Bottoms Region.

Missouri River East Region

Missouri River East Region - Week Most Prefer to Hunt and Week Most Prefer a Split

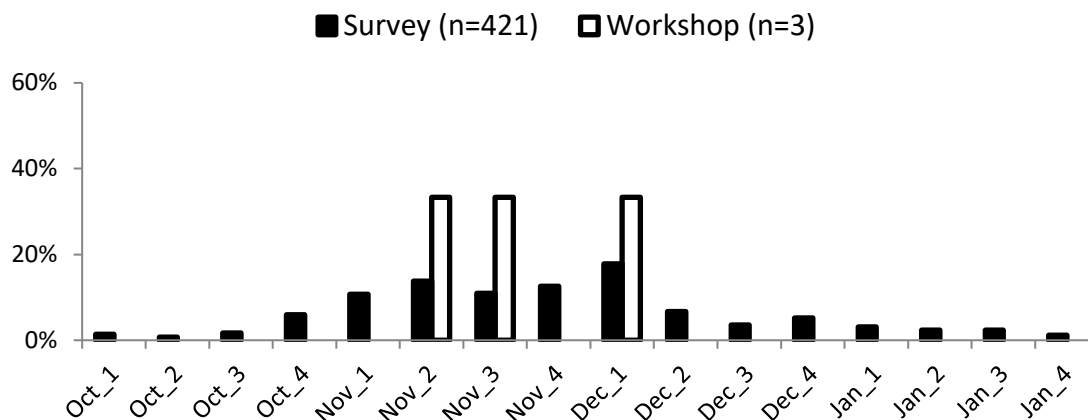


Figure 43. One week most preferred to hunt ducks by web survey respondents and workshop participants in the Missouri River East Region.

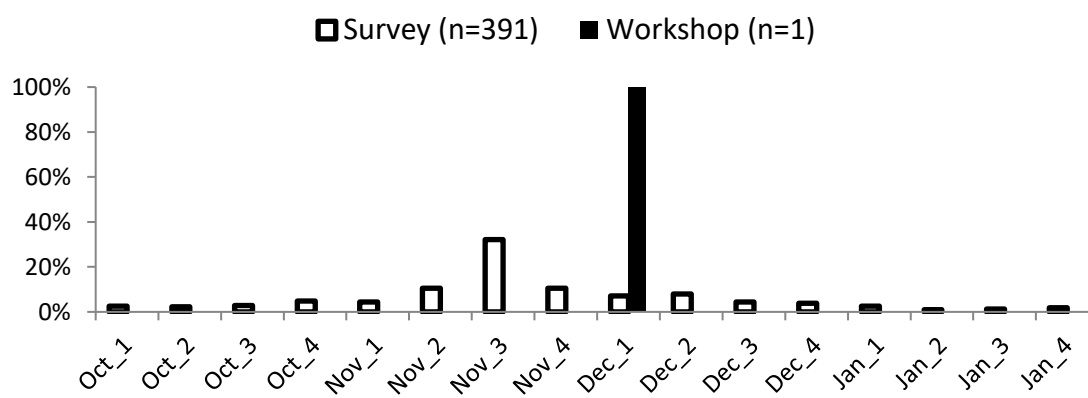


Figure 44. One week that web survey respondents and workshop participants from the Missouri River East Region would prefer a temporary closure in duck season.

Missouri River East Region – Season Date Preferences

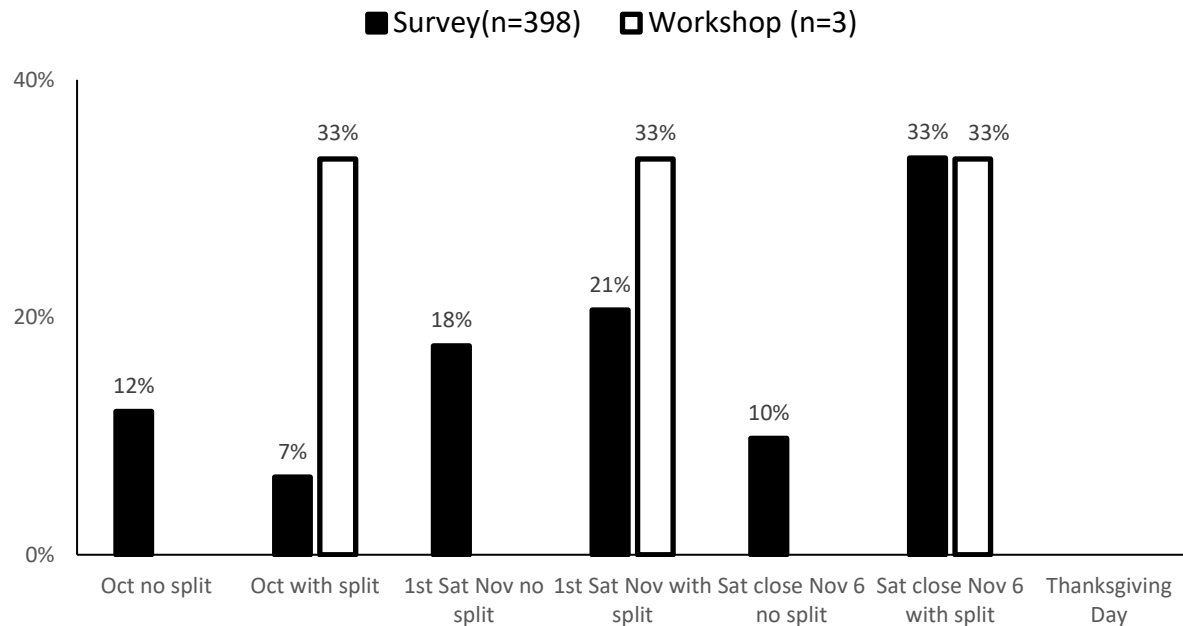


Figure 45. Season date preferences of web survey respondents and workshop participants in the Missouri River East Region.

Workshop Small Groups

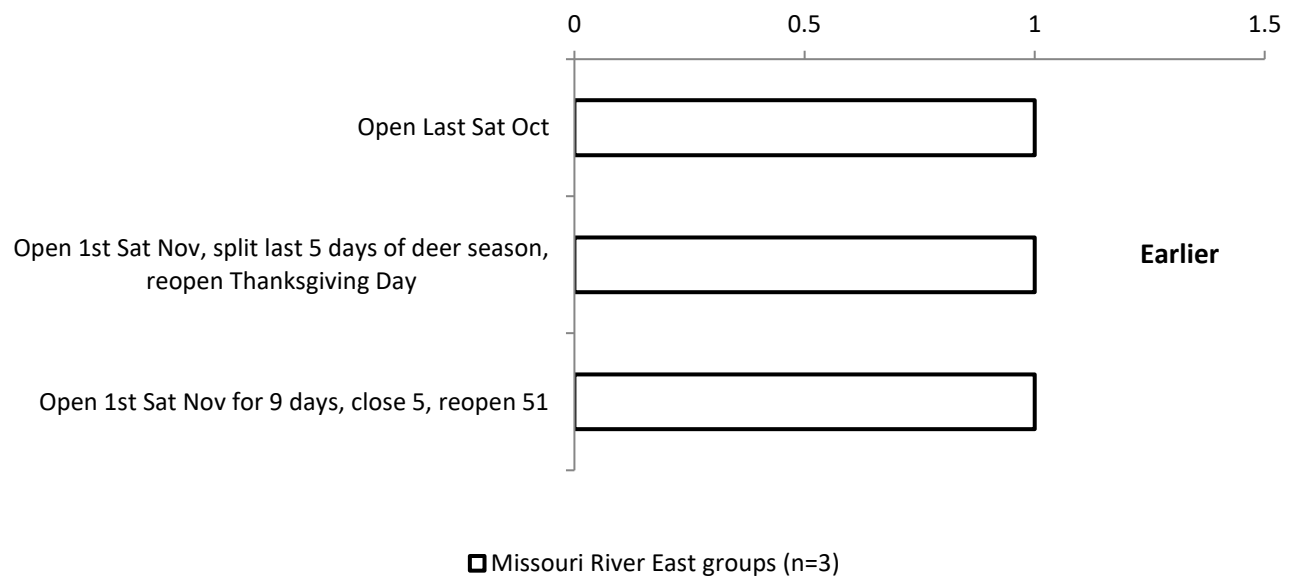


Figure 46. Sixty-day season date preferences for workshop small group participants from the Missouri River East Region.

St. Charles Region

St Charles Region - Week Most Prefer to Hunt and Week Most Prefer a Split

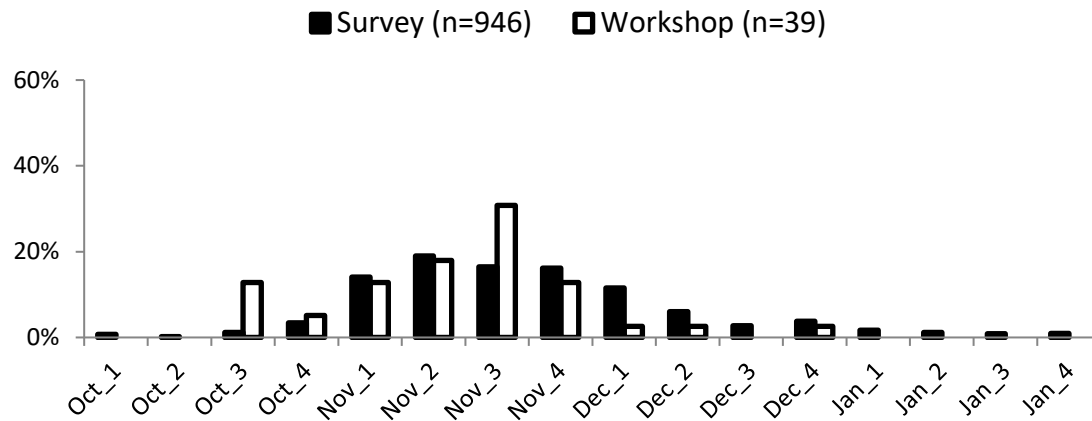


Figure 47. One week most preferred to hunt ducks by web survey respondents and workshop participants in the St Charles Region.

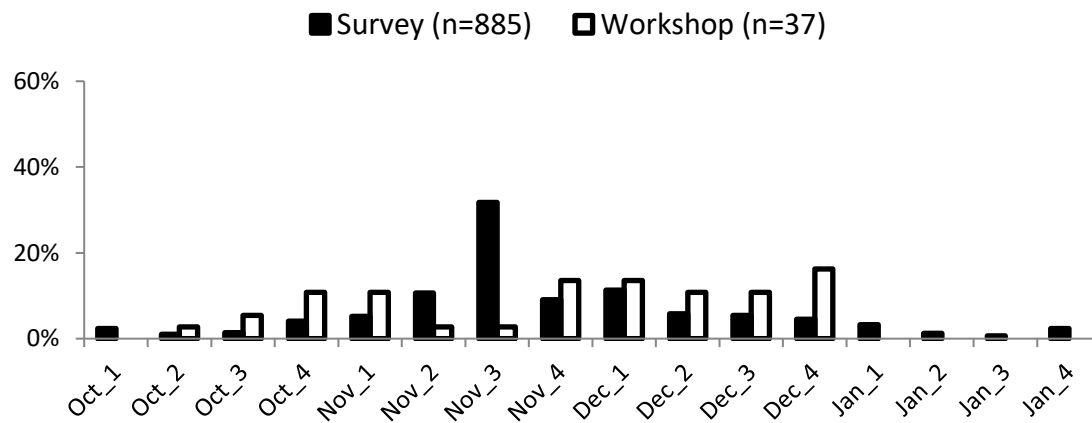


Figure 48. One week that web survey respondents and workshop participants from the St Charles Region would prefer a temporary closure in duck season.

St Charles Region – Season Date Preferences

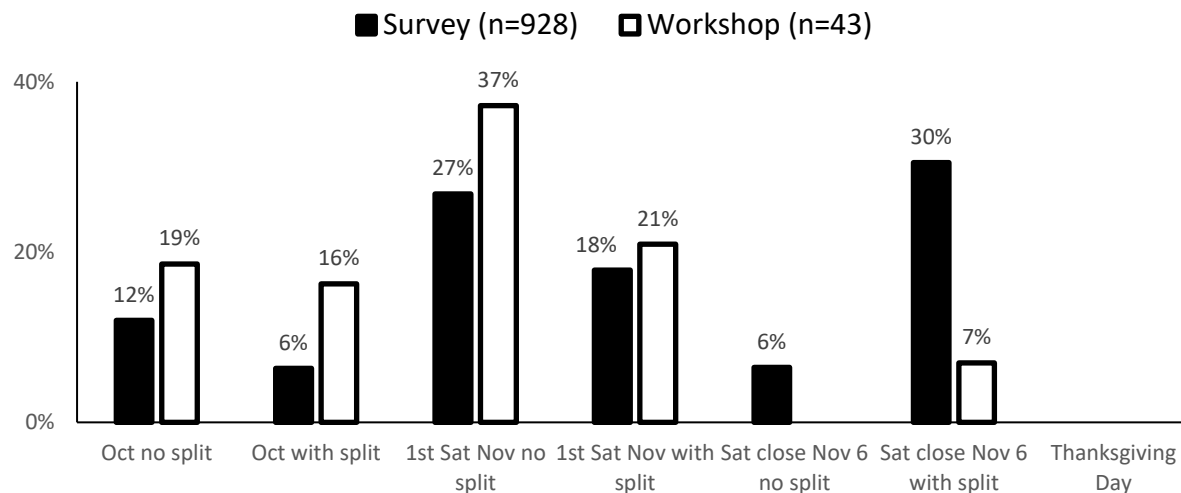


Figure 49. Season date preferences by web survey respondents and workshop participants in the St Charles Region.

Workshop Small Groups

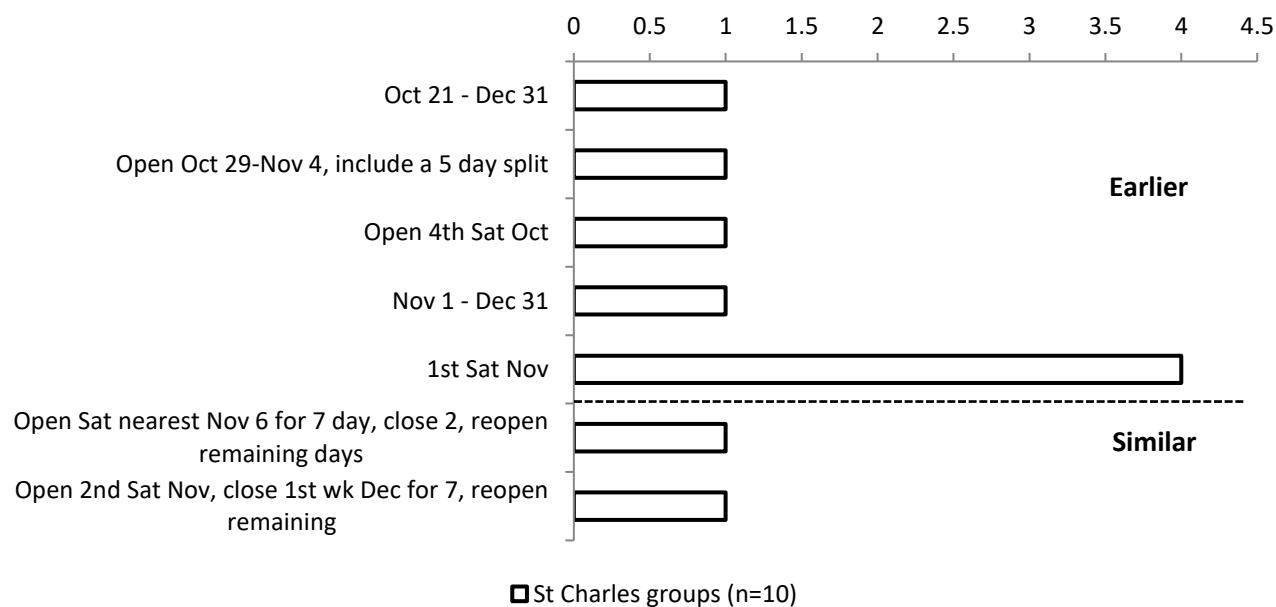
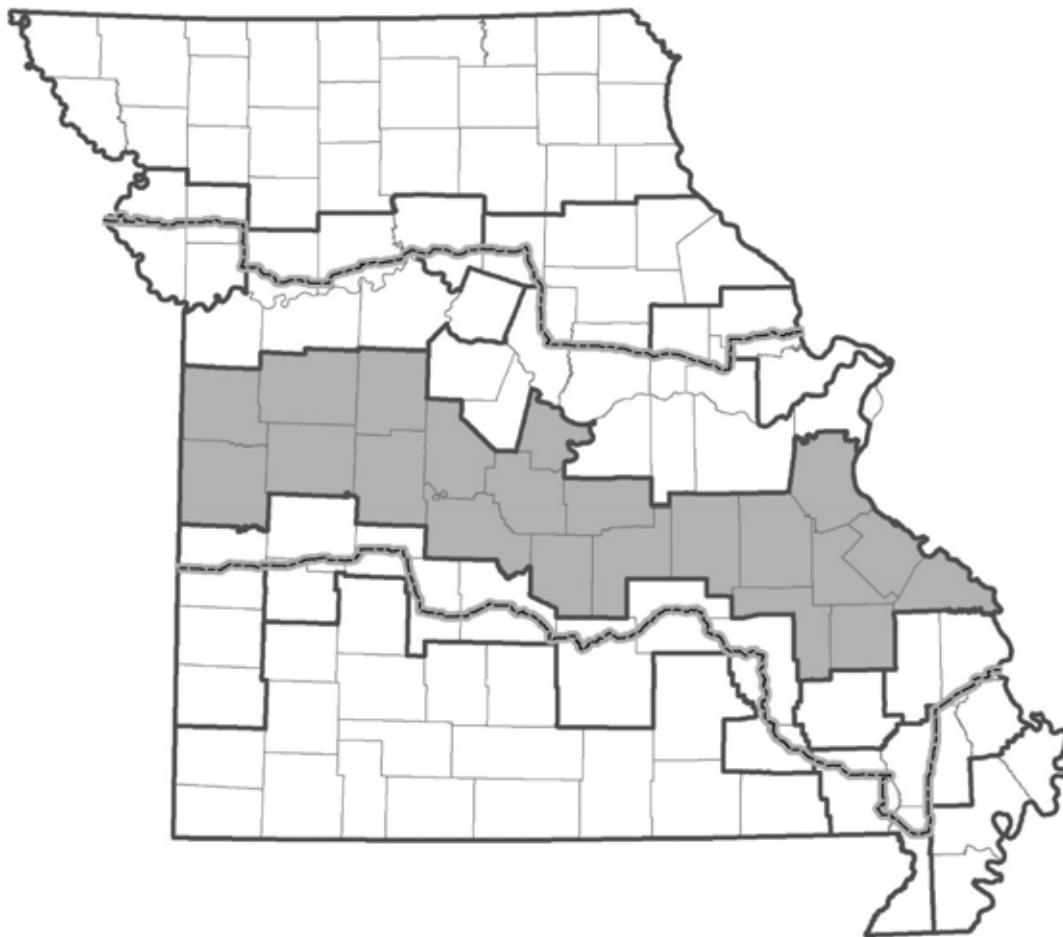


Figure 50. Sixty-day season date preferences for workshop small group participants from St. Charles Region.

Central Region

Central Region - Week Most Prefer to Hunt and Week Most Prefer a Split

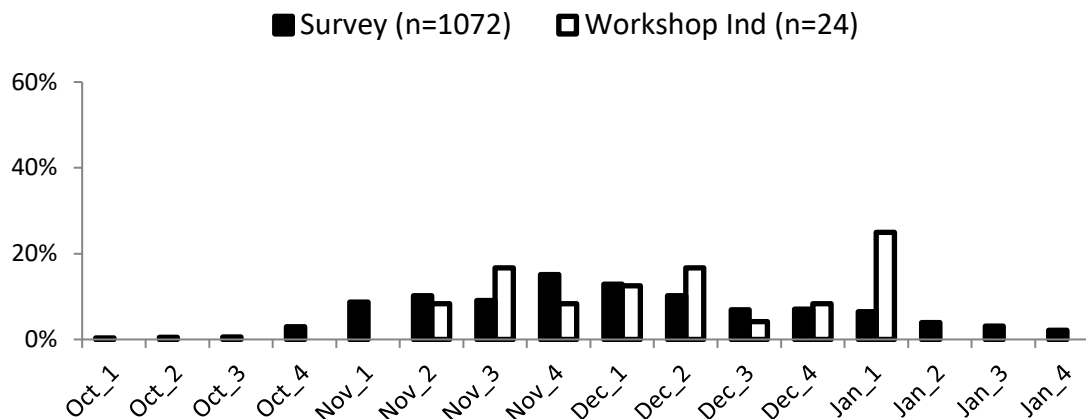


Figure 51. One week most preferred to hunt ducks by web survey respondents and workshop participants in the Central Region.

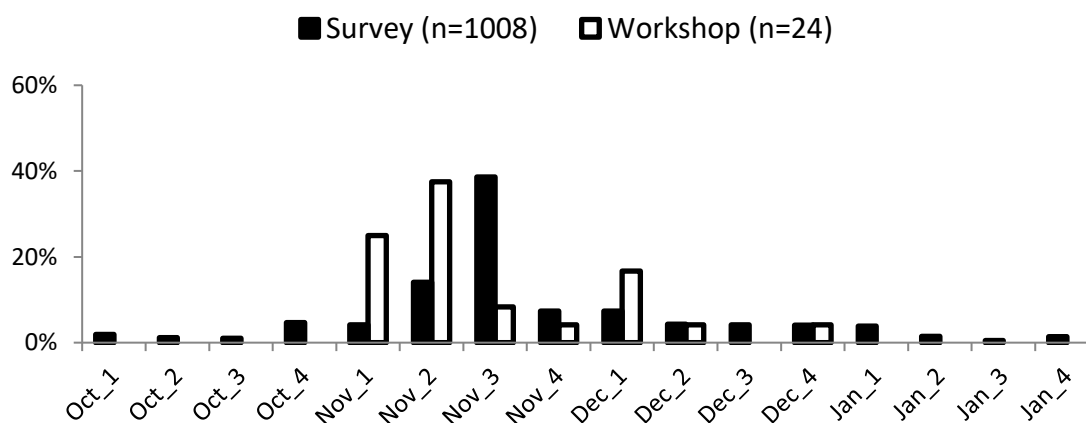


Figure 52. One week that web survey respondents and workshop participants from the Central Region would prefer a temporary closure in duck season.

Central Region – Season Date Preferences

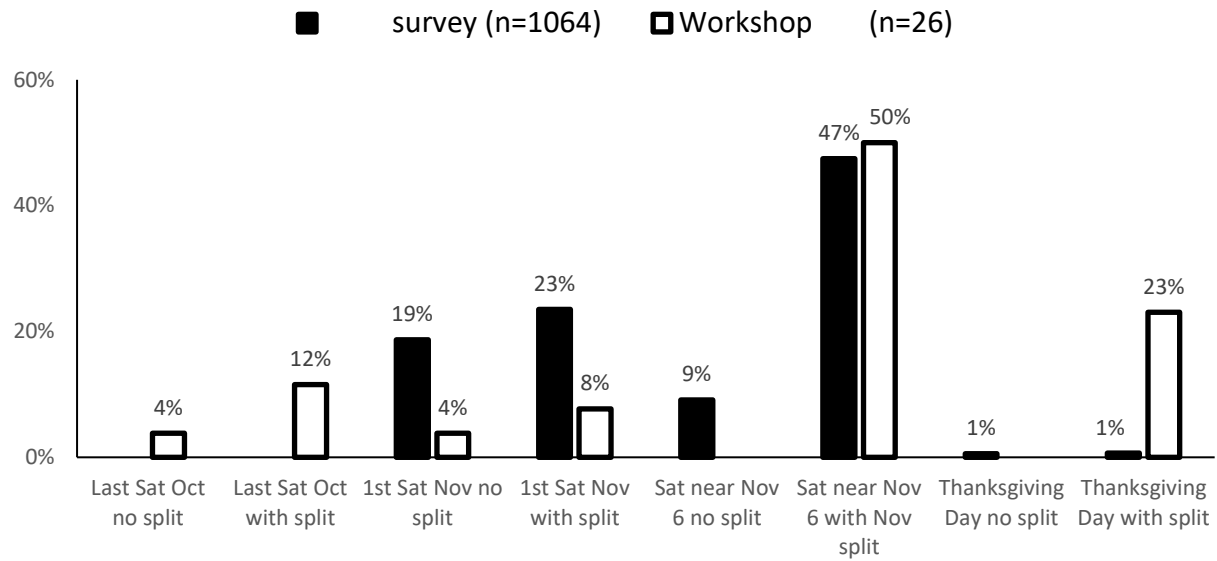


Figure 53. Season date preferences by web survey respondents and workshop participants in the Central Region.

Workshop Small Groups

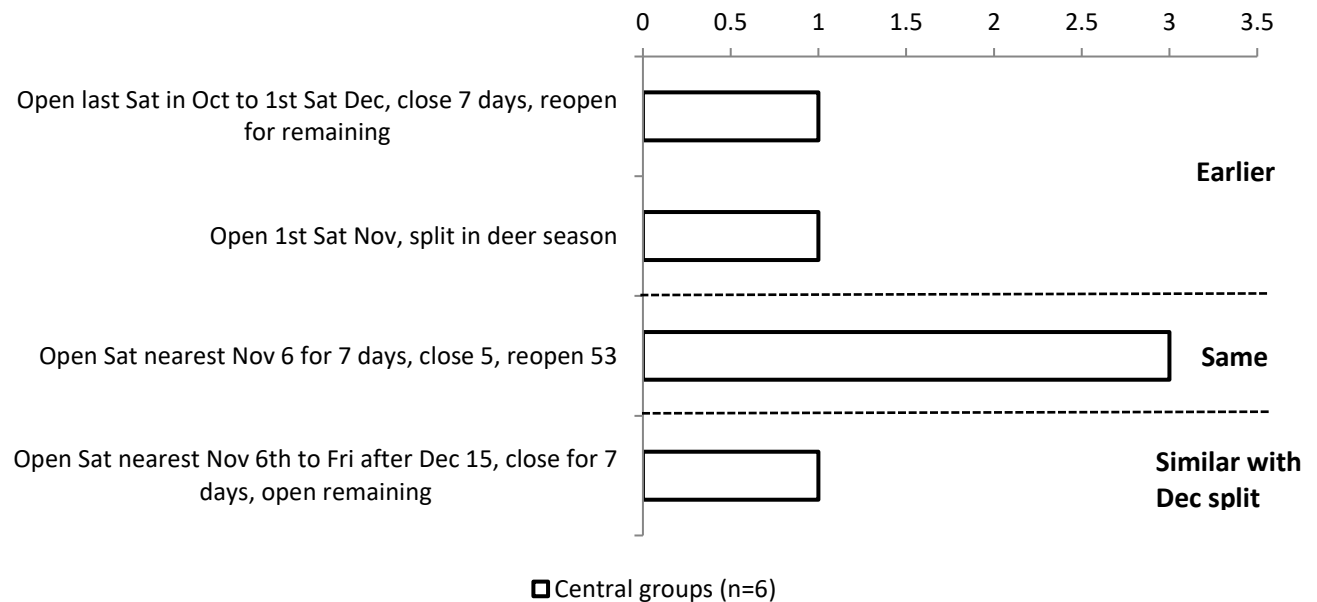
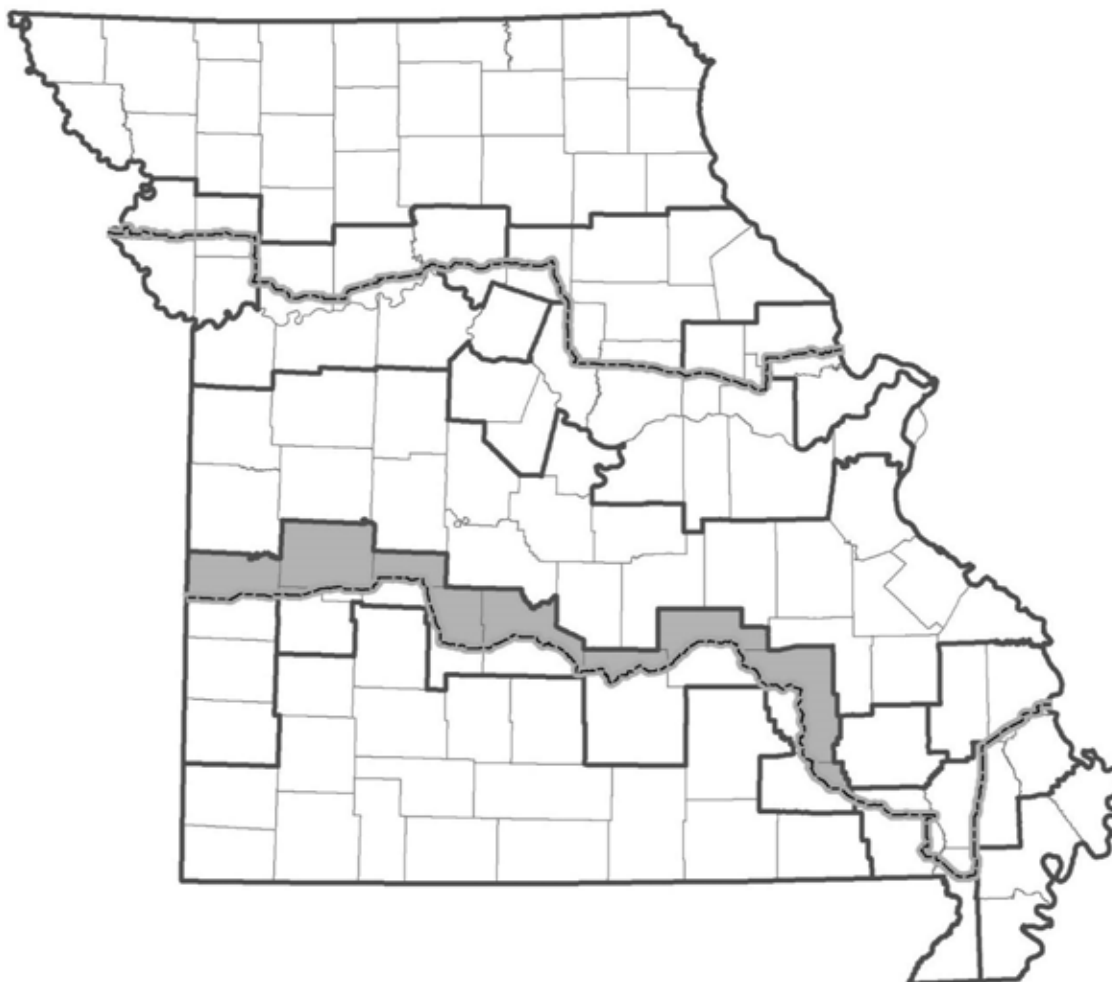


Figure 54. Sixty-day season date preferences for workshop small group participants from the Central Region.

South Border – Middle Region



South Border - Middle Region - Week Most Prefer to Hunt and Week Most Prefer a Split

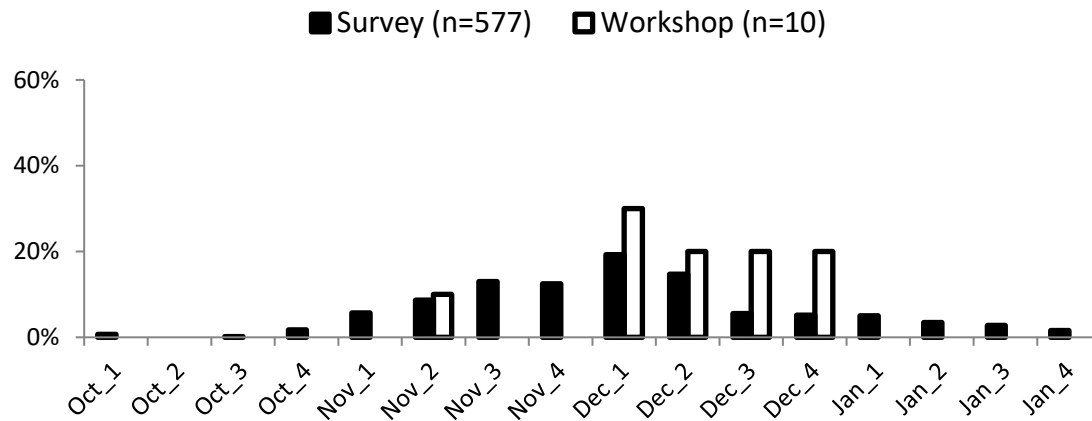


Figure 55. One week most preferred to hunt ducks by web survey respondents and workshop participants in the South Border - Middle Region.

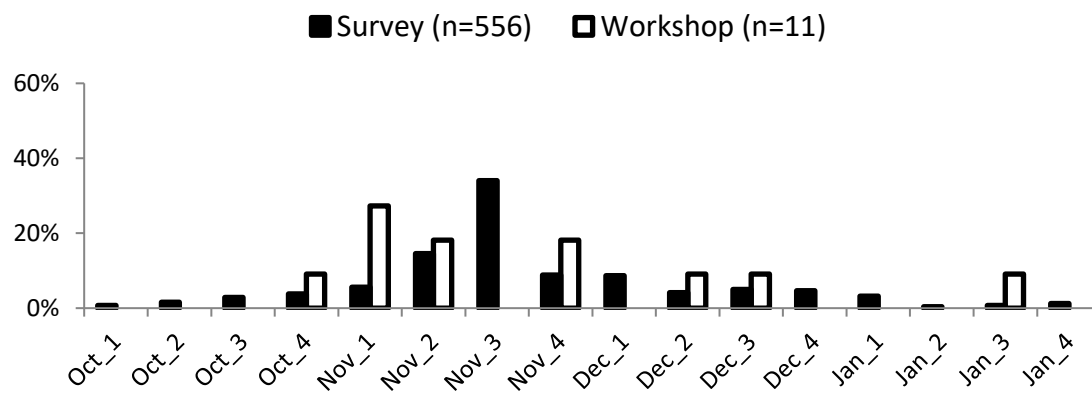


Figure 56. One week that web survey respondents and workshop participants from the South Border - Middle Region would prefer a temporary closure in duck season.

South Border - Middle Region – Season Date Preferences

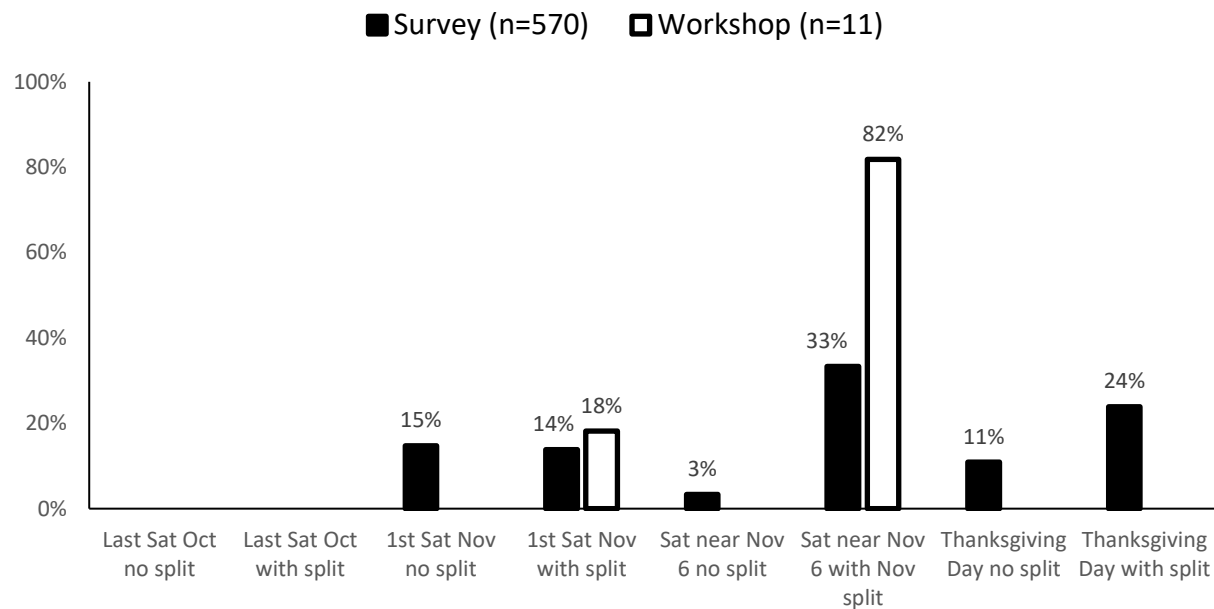


Figure 57. Season date preferences by web survey respondents and workshop participants in the South Border - Middle Region.

Small Group Results

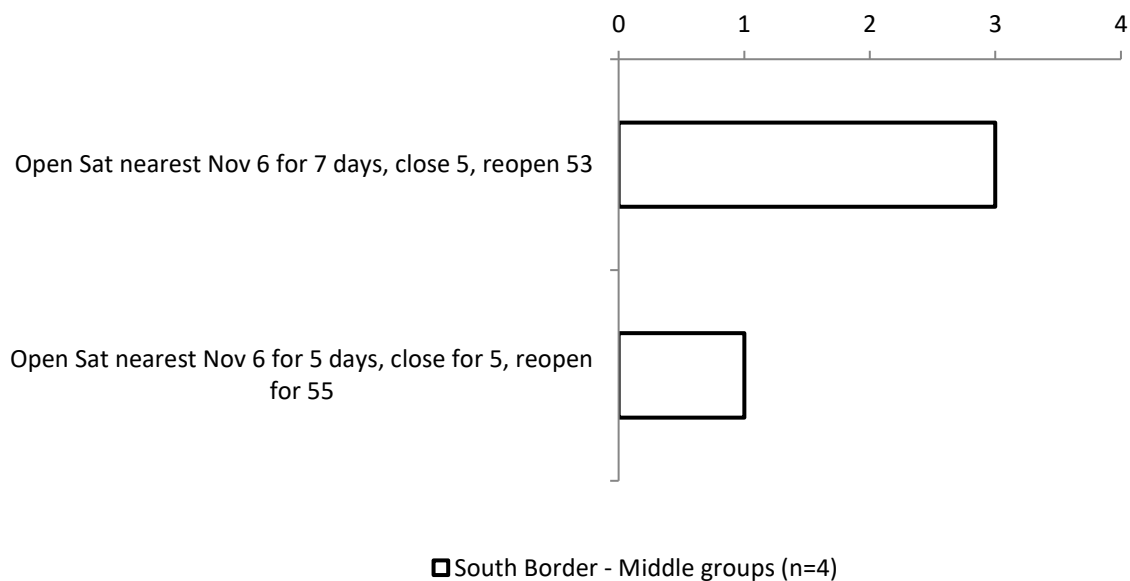


Figure 58. Sixty-day season date preferences for workshop small group participants from the South Border -Middle Region.

Wappapello Region

Wappapello Region - Week Most Prefer to Hunt and Week Most Prefer a Split

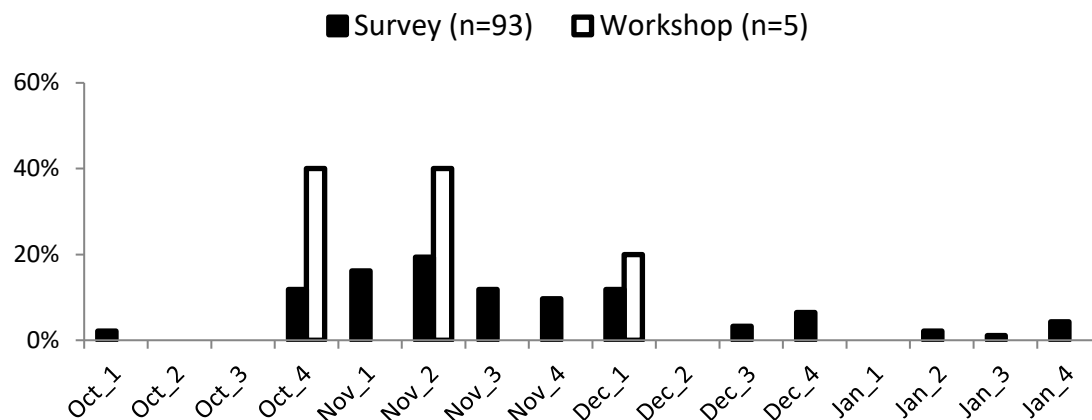


Figure 59. One week most preferred to hunt ducks by web survey respondents and workshop participants in the Wappapello Region.

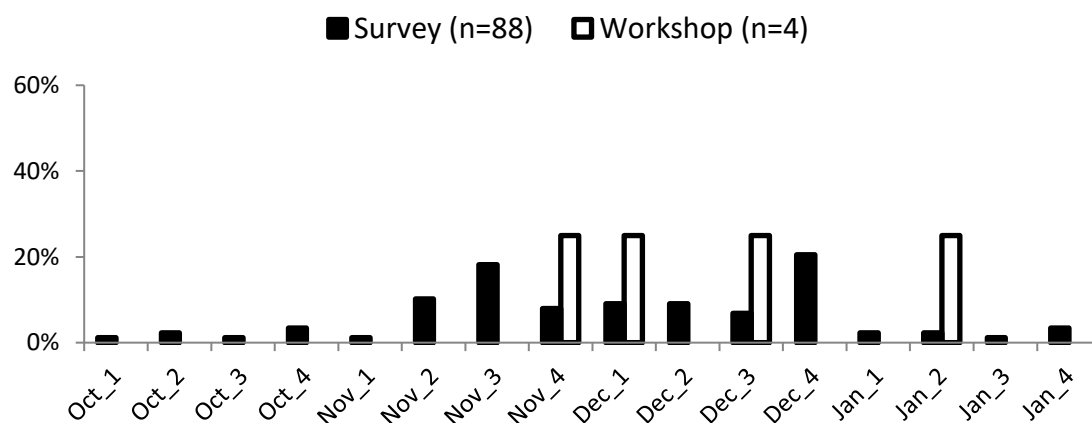


Figure 60. One week web survey respondents and workshop participants from the Wappapello Region would prefer a temporary closure in duck season.

Wappapello Region – Season Date Preferences

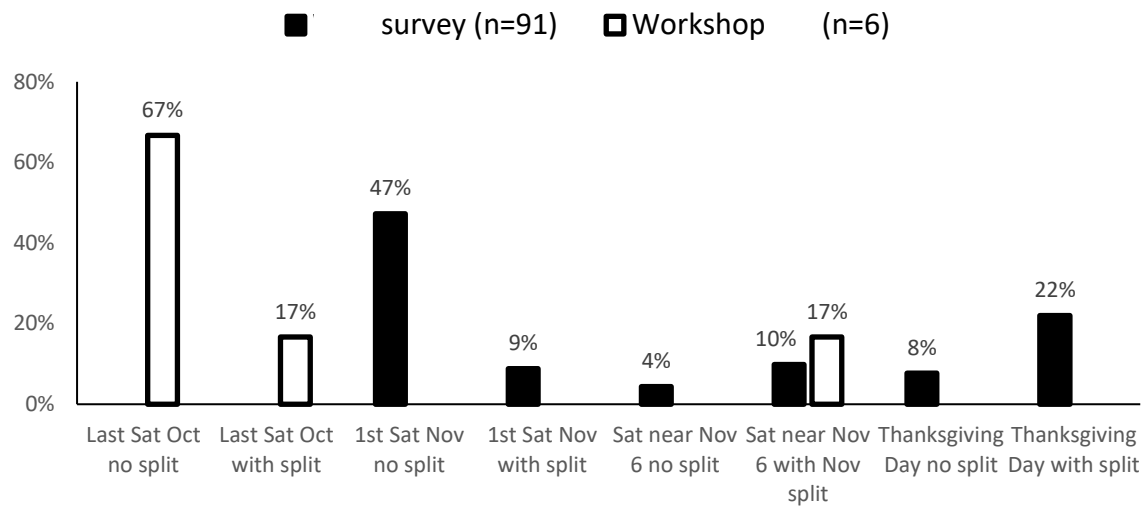


Figure 61. Season date preferences for web survey respondents and workshop participants in the Wappapello Region.

Small Group Results

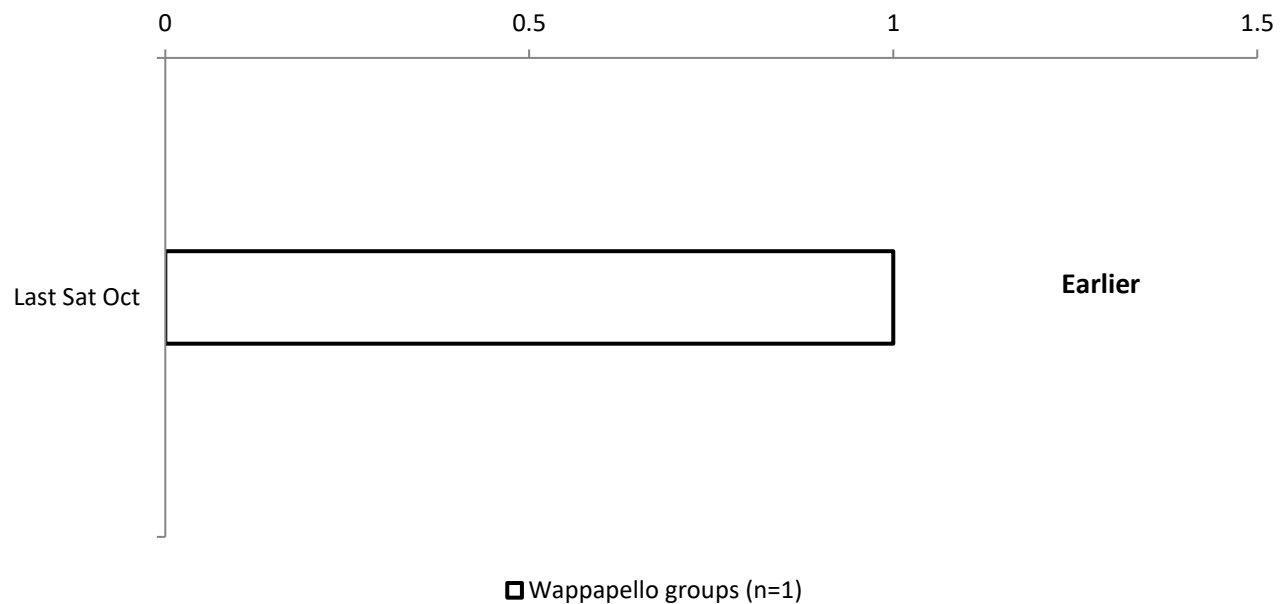


Figure 62. Sixty-day season date preferences for workshop small group participants from the Wappapello Region.

Mingo Basin Region



Mingo Basin Region - Week Most Prefer to Hunt and Week Most Prefer a Split

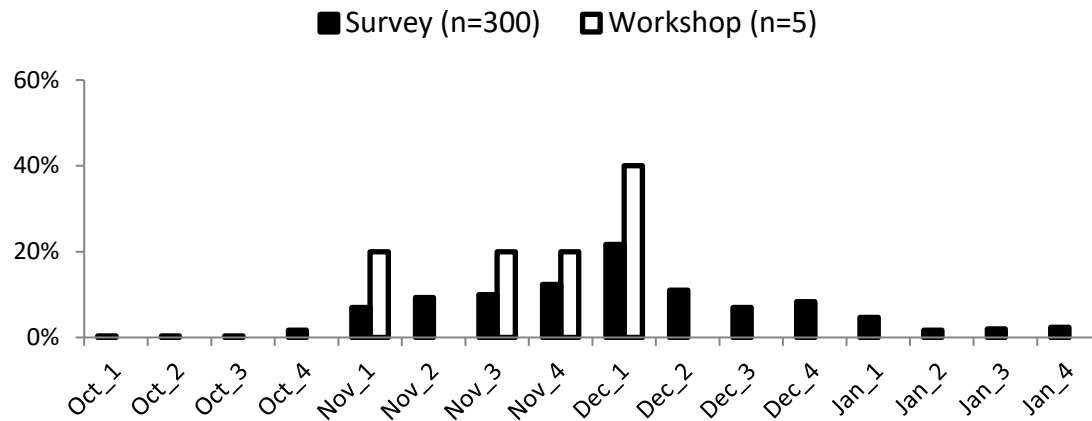


Figure 63. One week most preferred to hunt ducks by web survey respondents and workshop participants in the Mingo Basin Region.

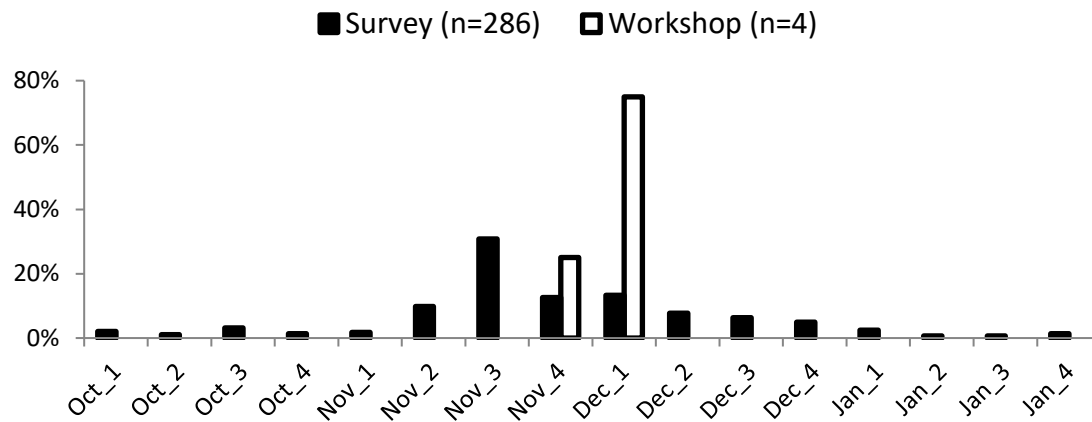


Figure 64. One week that web survey respondents and workshop participants from the Mingo Basin Region would prefer a temporary closure in duck season.

Mingo Basin Region – Season Date Preferences

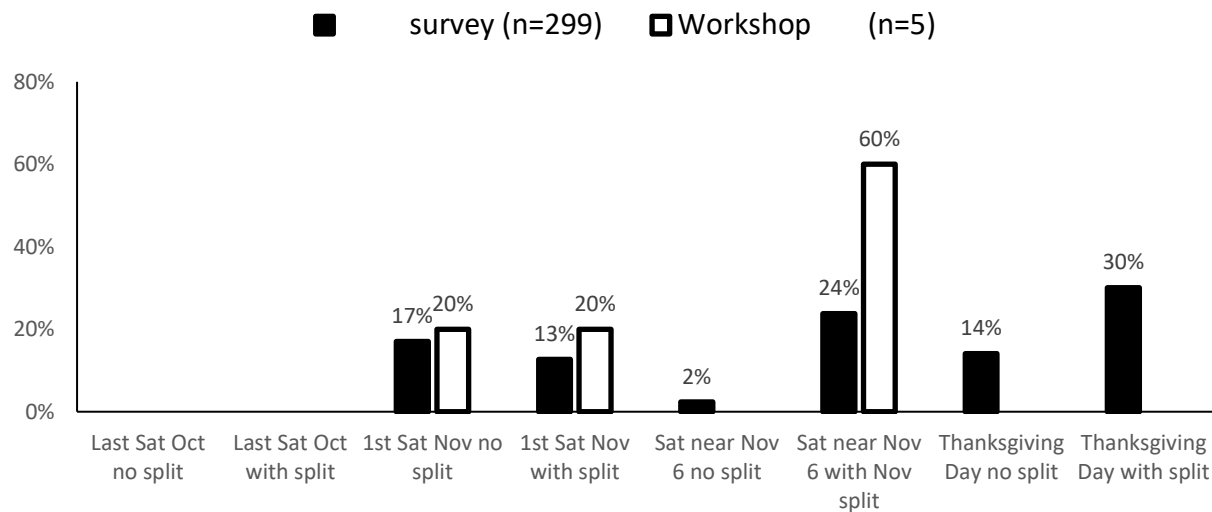


Figure 65. Season date preferences by web survey respondents and workshop participants in the Mingo Basin Region.

Workshop Small groups

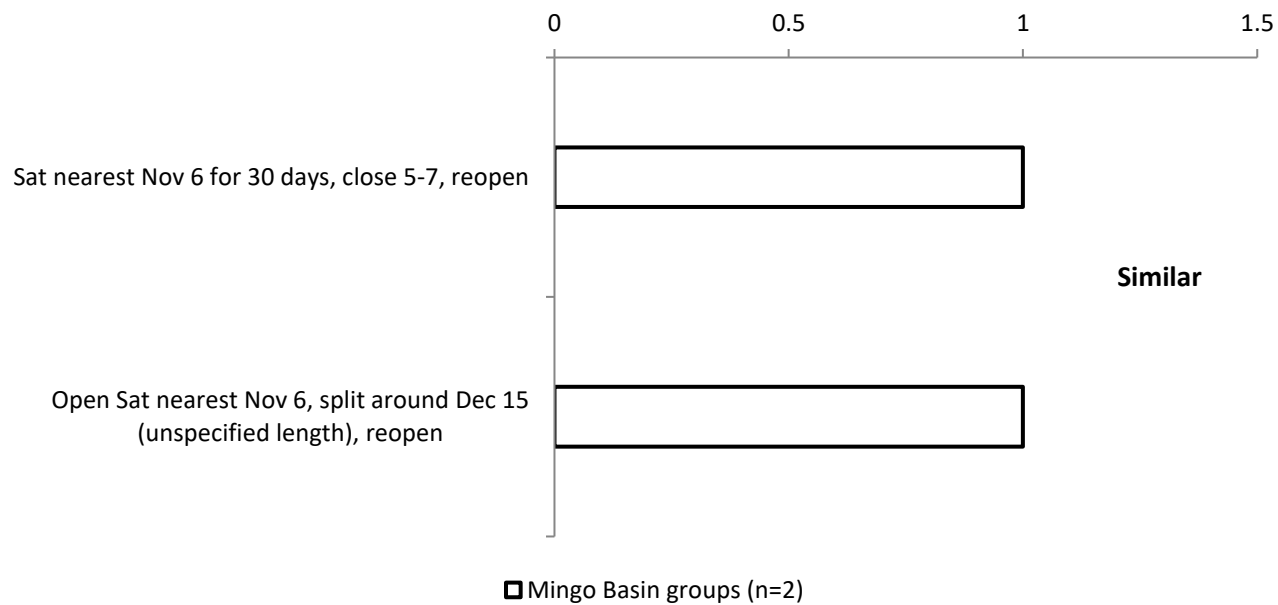


Figure 66. Sixty-day season date preferences for workshop small group participants from the Mingo Basin Region.

Stoddard West Region

Stoddard West Region - Week Most Prefer to Hunt and Week Most Prefer a Split

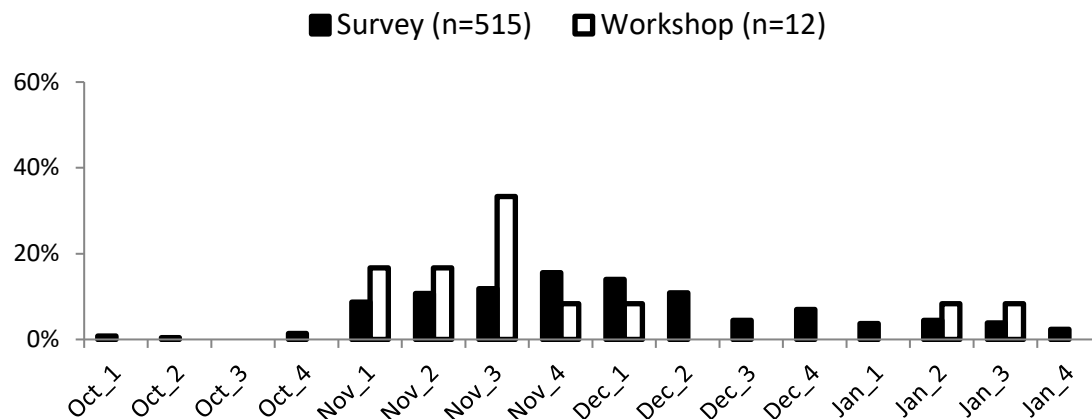


Figure 67. One week most preferred to hunt ducks by web survey respondents and workshop participants in the Stoddard - West Region.

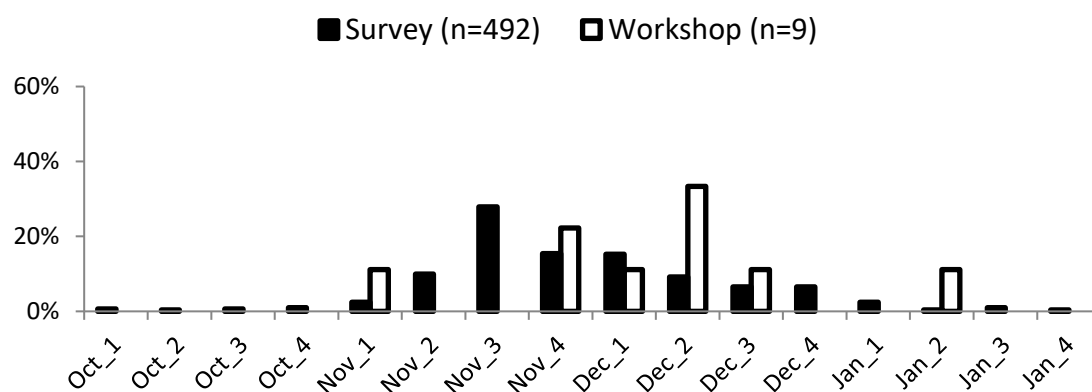


Figure 68. One week that web survey respondents and workshop participants from the Stoddard - West Region would prefer a temporary closure in duck season.

Stoddard West Region – Season Date Preferences

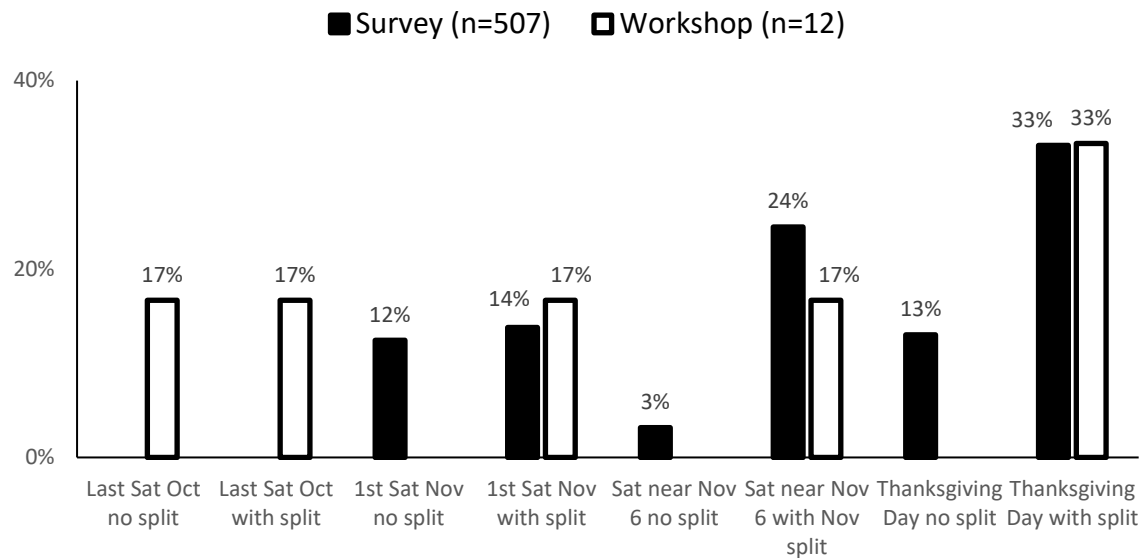


Figure 69. Season date preferences by web survey respondents and workshop participants in the Stoddard West Region.

Stoddard West Region - Season Date Formula Preferences – 60-day season

Workshop Small groups

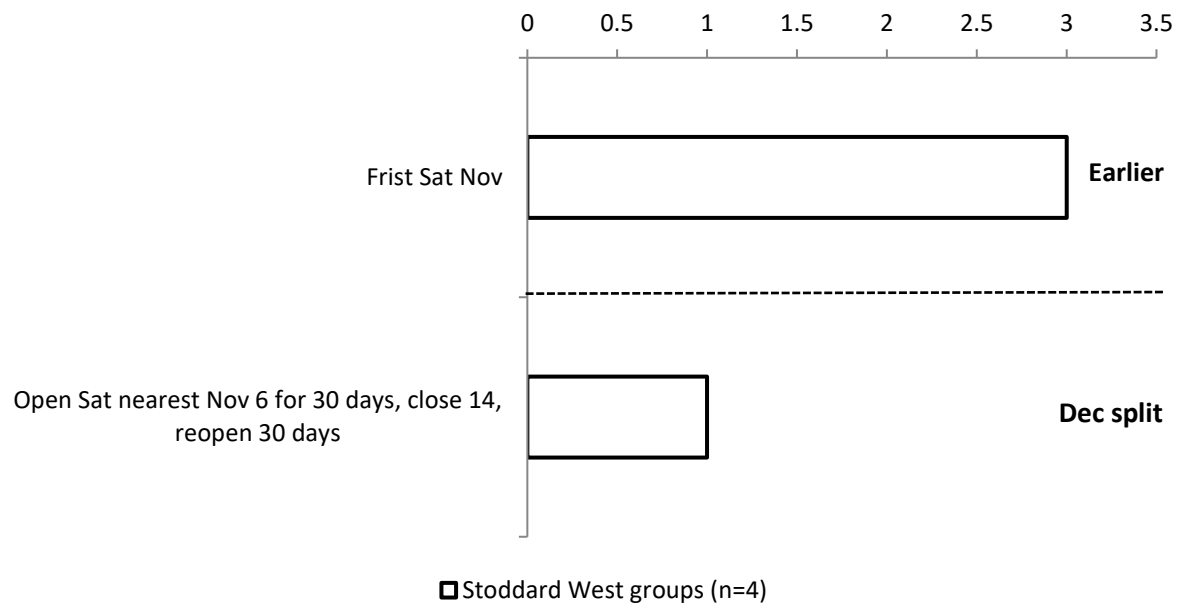
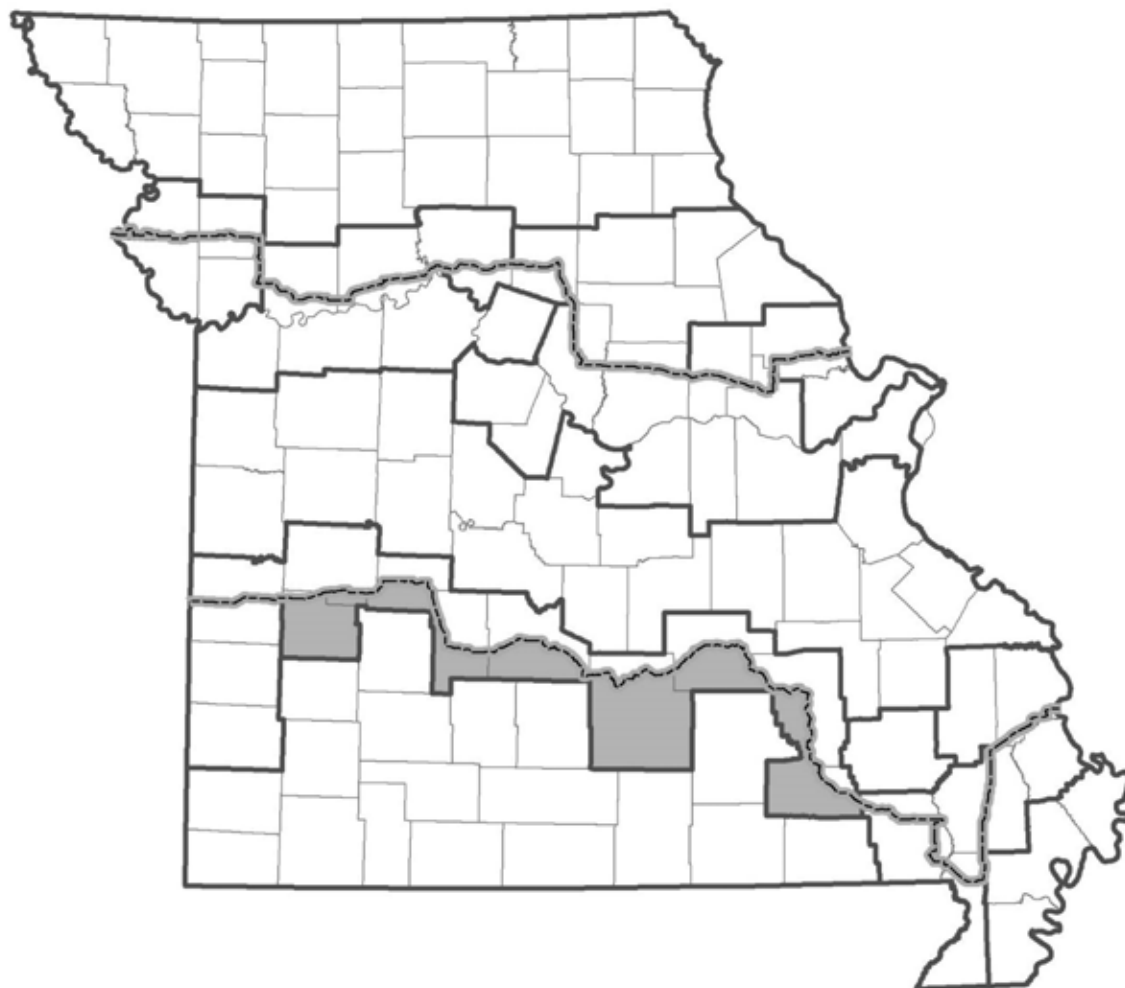


Figure 70. Sixty-day season date preferences for workshop small group participants from the Stoddard West Region.

South Border – South Region

South Border – South Region - Week Most Prefer to Hunt and Week Most Prefer a Split

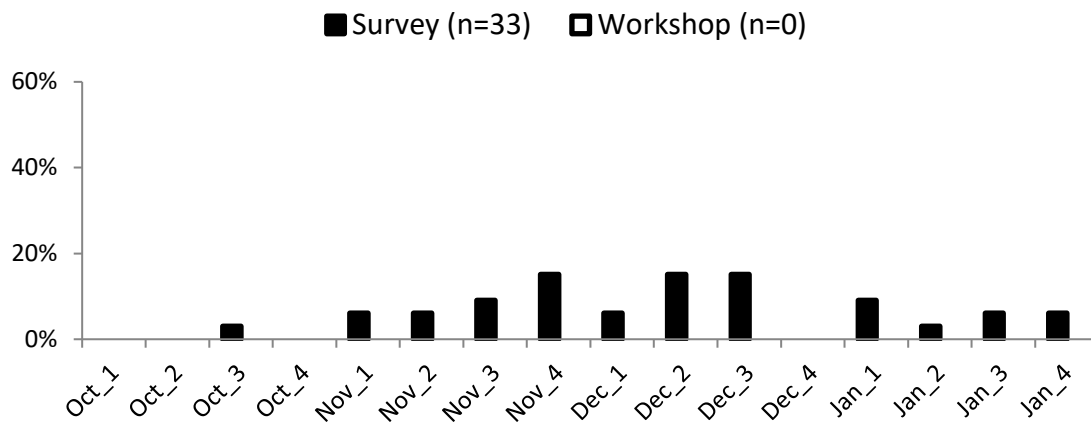


Figure 71. One week most preferred to hunt ducks by web survey respondents and workshop participants in the South Border - South Region.

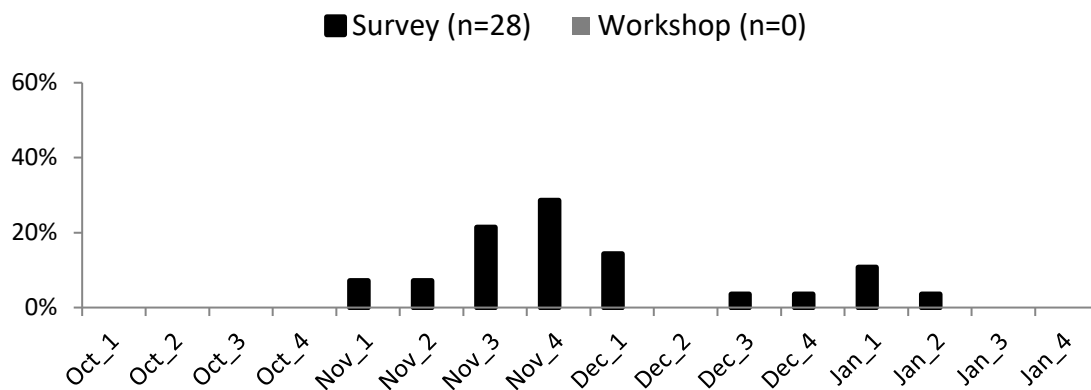


Figure 72. One week that web survey respondents and workshop participants from the South Border - South Region would prefer a temporary closure in duck season.

South Border – South Region – Season Date Preferences

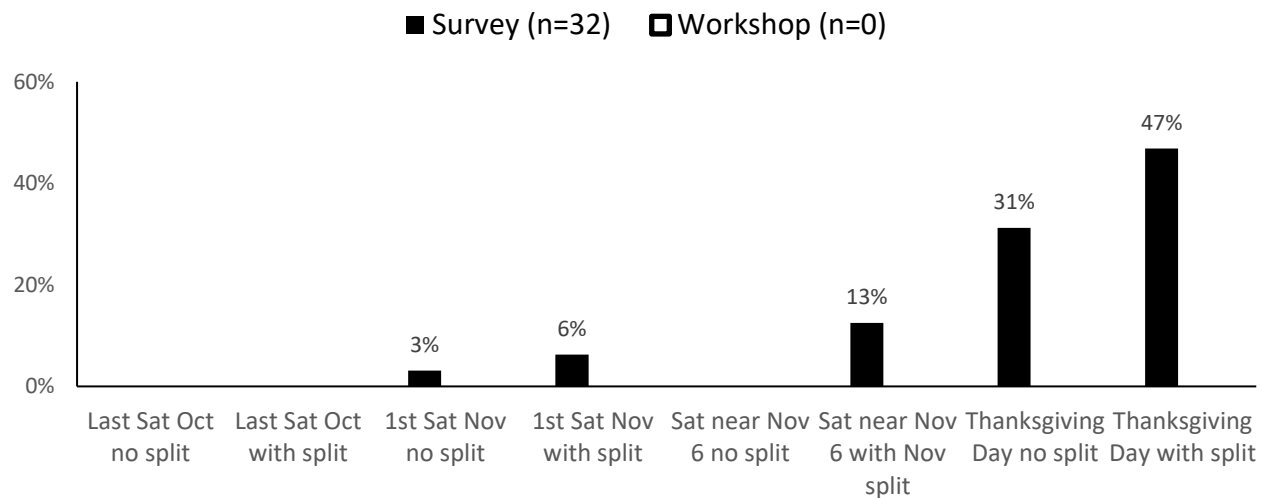
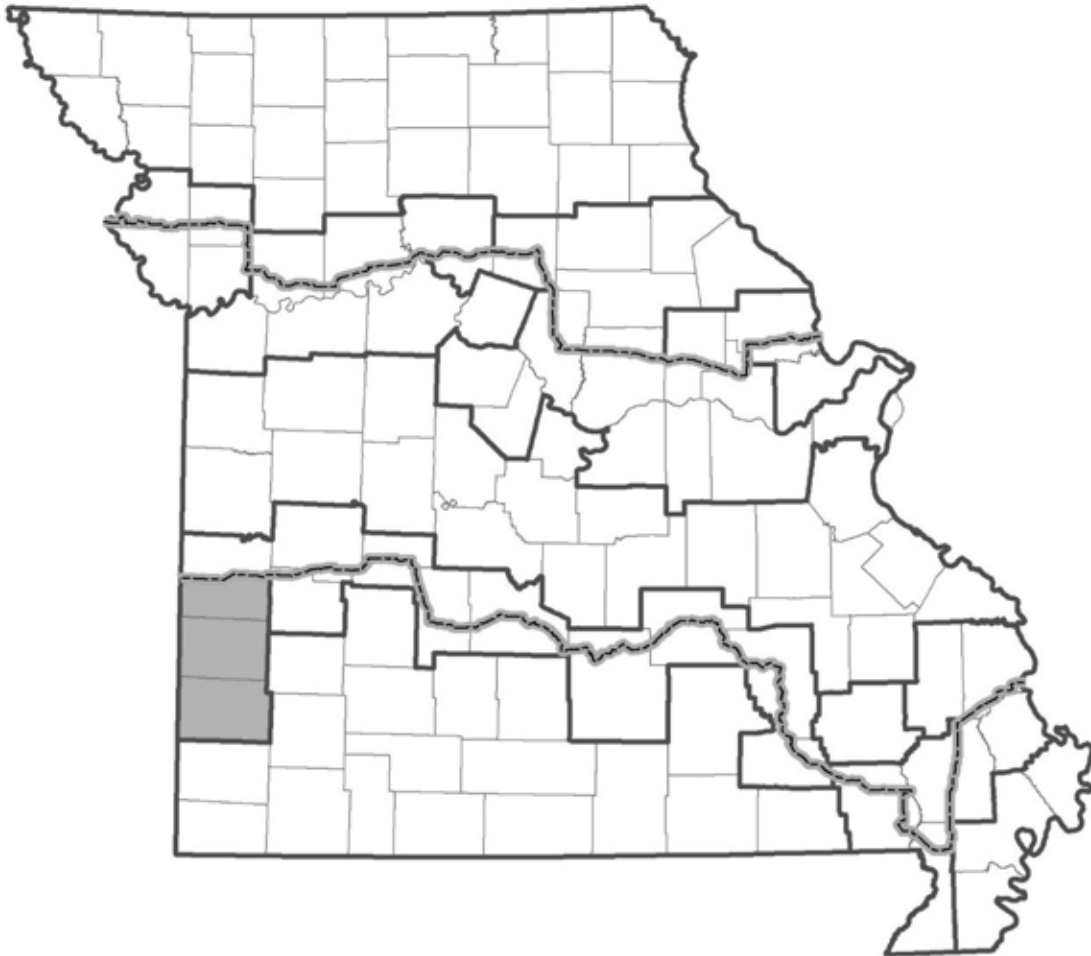


Figure 73. Season date preferences by web survey respondents and workshop participants in South Border - South Region.

Barton Region

Barton Region - Week Most Prefer to Hunt and Week Most Prefer a Split

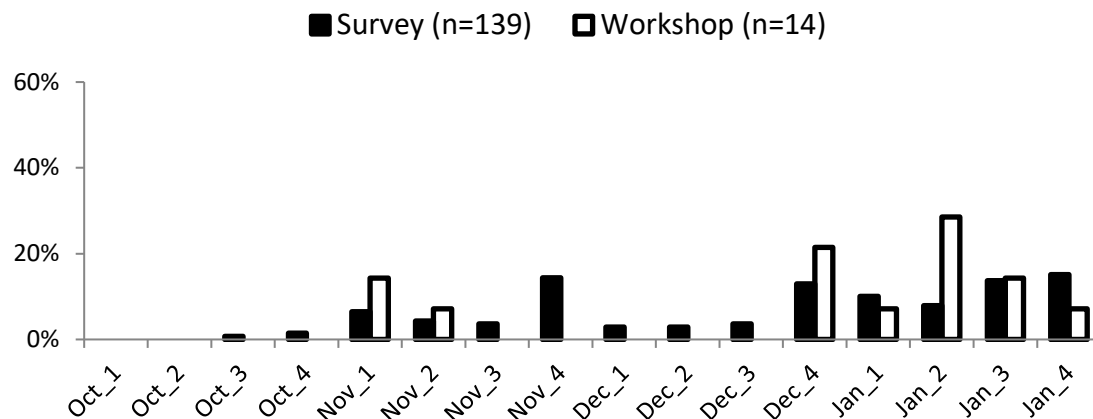


Figure 74. One week most preferred to hunt ducks by web survey respondents and workshop participants in the Barton Region.

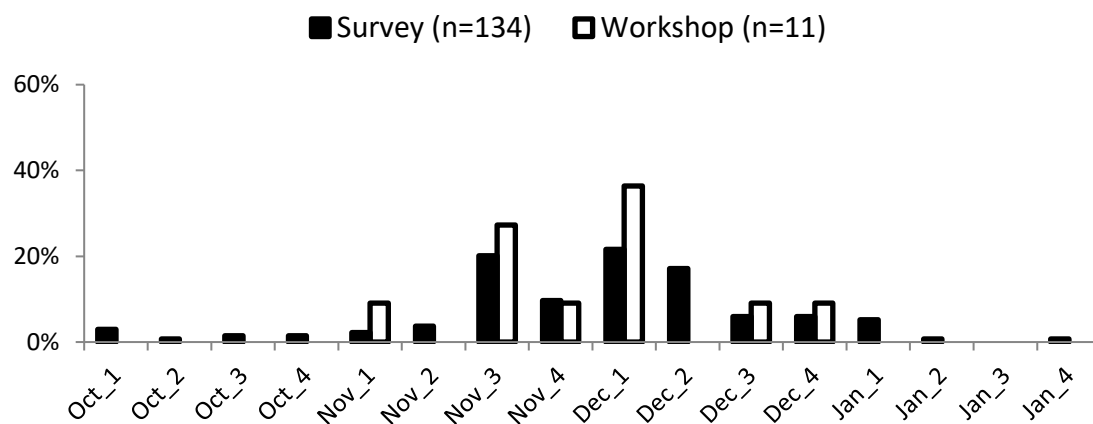


Figure 75. One week web survey respondents and workshop participants from the Barton Region would prefer a temporary closure in duck season.

Barton Region – Season Date Preferences

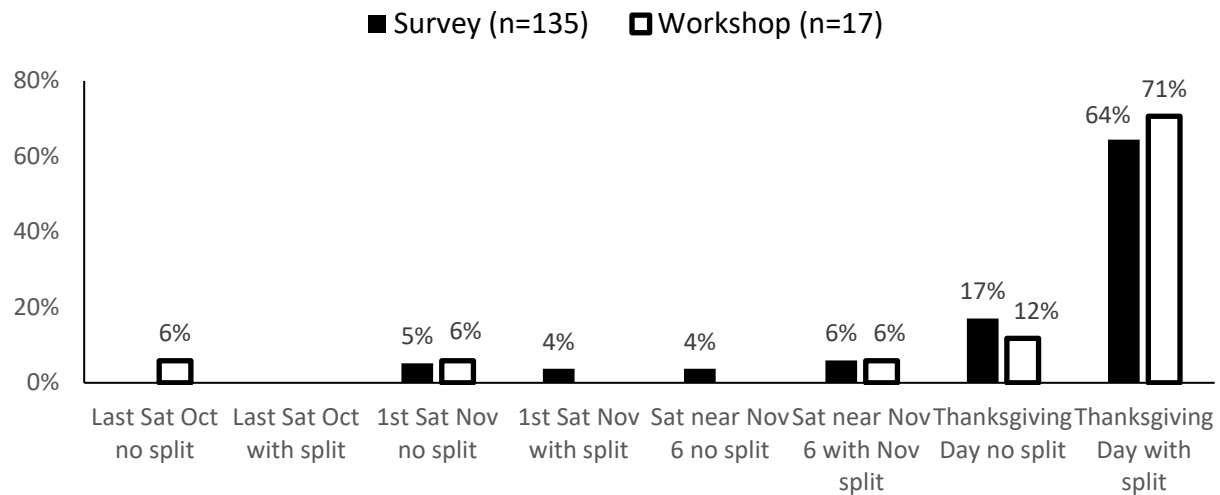


Figure 76. Season date preferences by web survey respondents and workshop participants in Barton Region.

Workshop Small groups

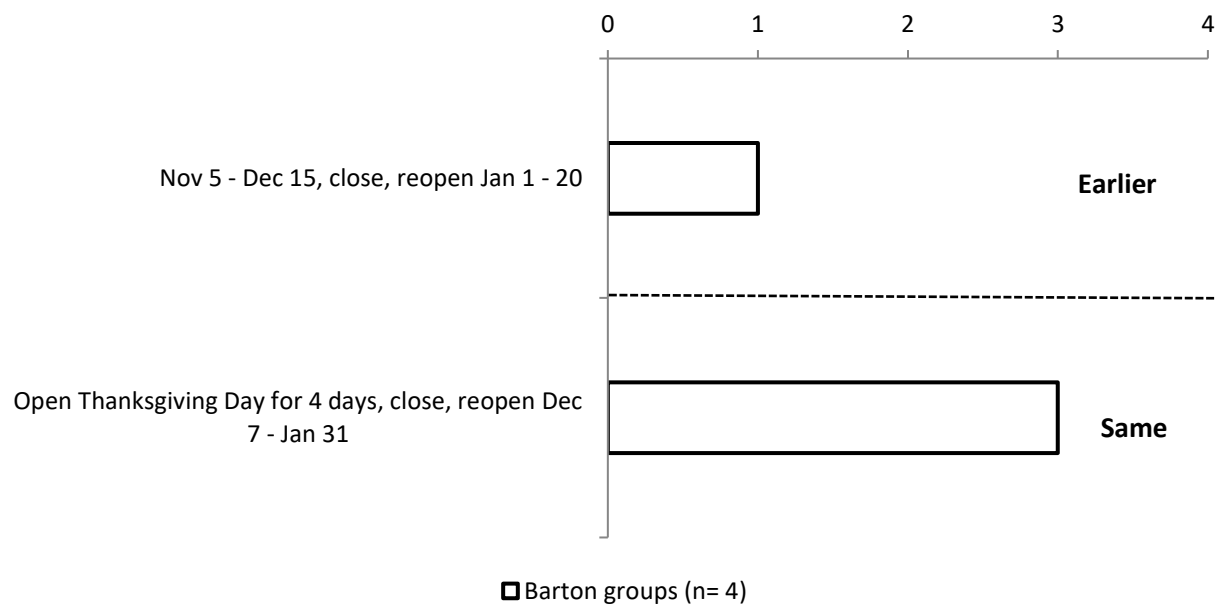


Figure 77. Sixty-day season date preferences for small groups from Barton Region.

Stoddard East Region



Stoddard East Region - Week Most Prefer to Hunt and Week Most Prefer a Split

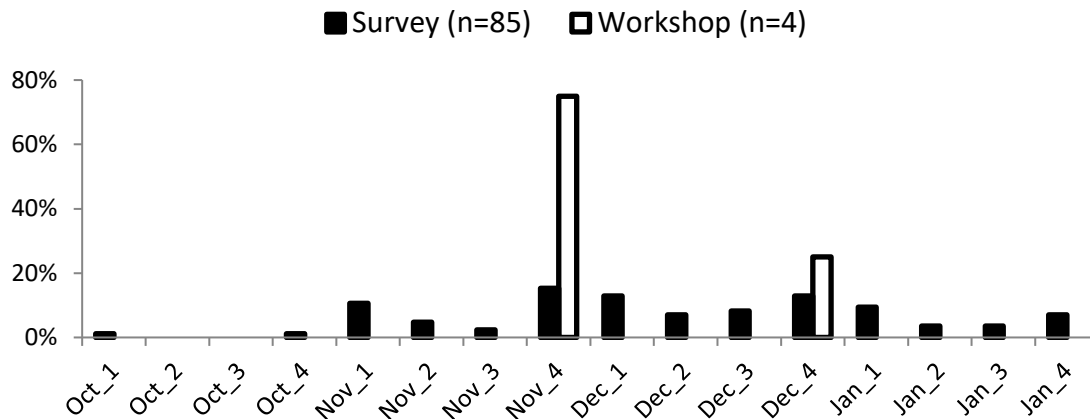


Figure 78. One week most preferred to hunt ducks by web survey respondents and workshop participants in the Stoddard - East Region.

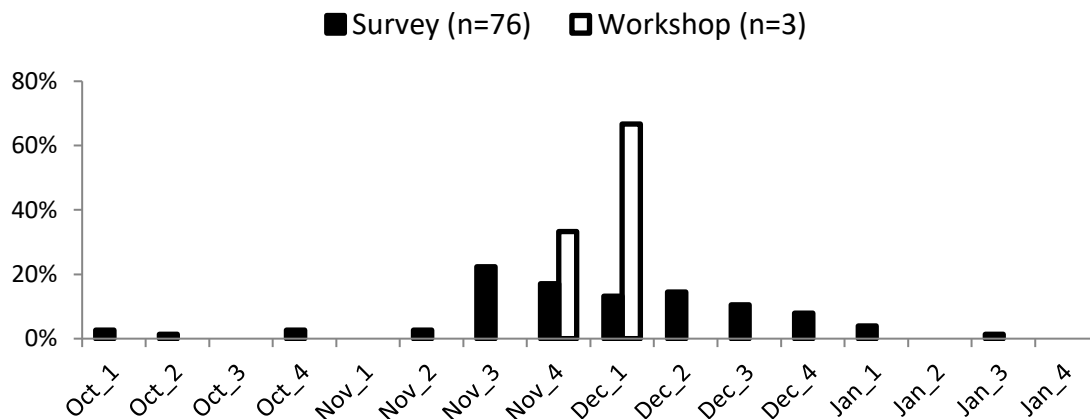


Figure 79. One week web survey respondents and workshop participants from the Stoddard - East Region would prefer a temporary closure in duck season.

Stoddard East Region – Season Date Preferences

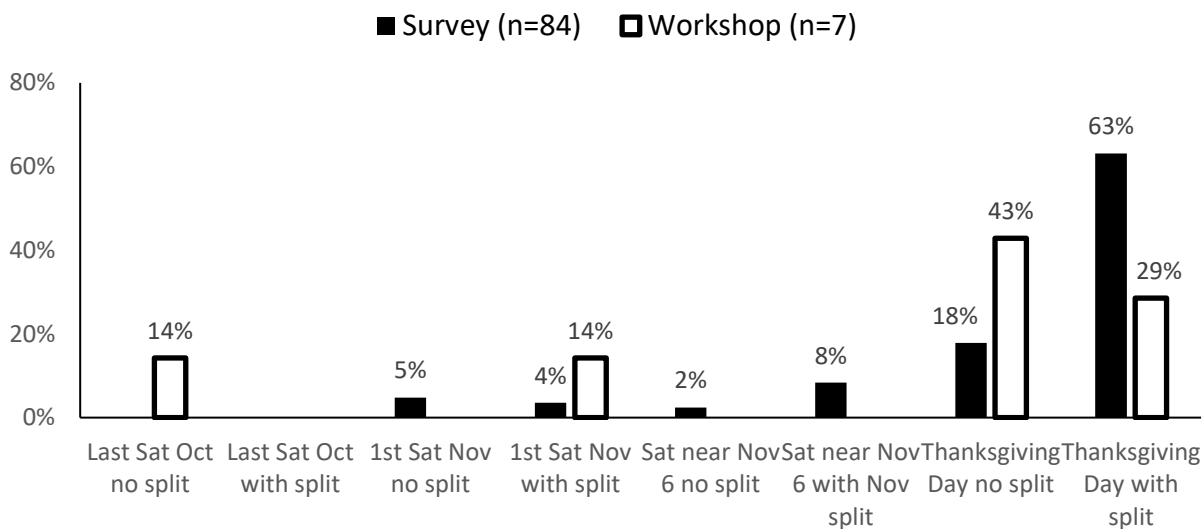


Figure 80. Season date preferences by web survey respondents and workshop participants in the Stoddard East Region.

Workshop Small groups

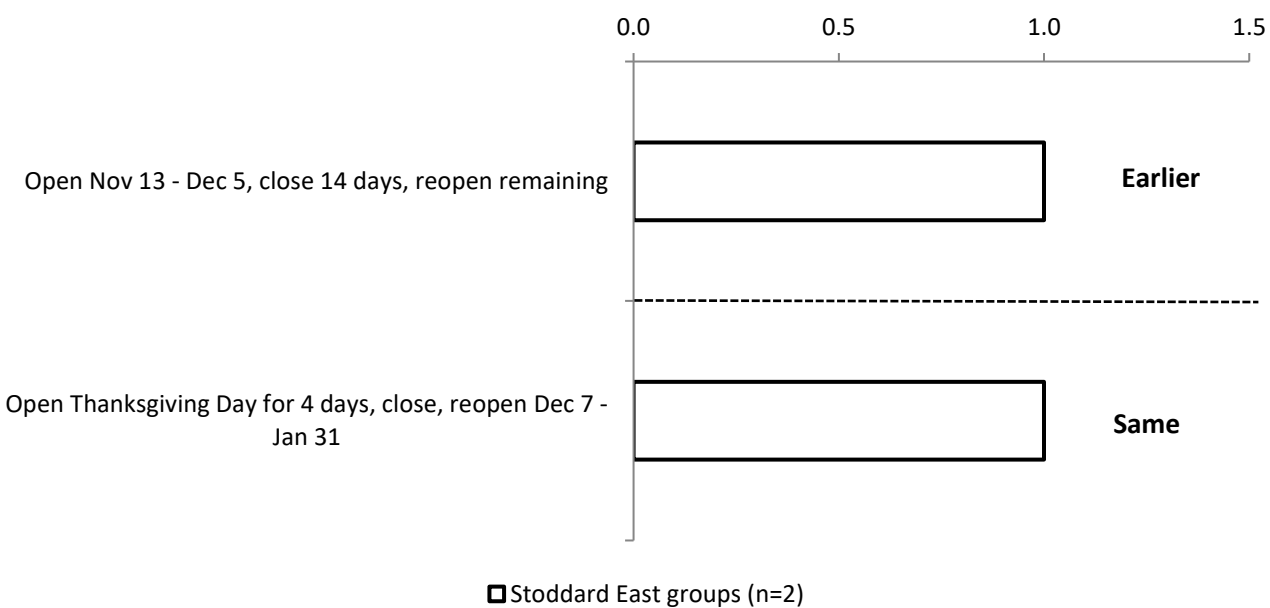


Figure 81. Sixty-day season date preferences for small groups from Stoddard East region.

Bootheel Border Region

Bootheel Border Region - Week Most Prefer to Hunt Ducks and Week Most Prefer a Split

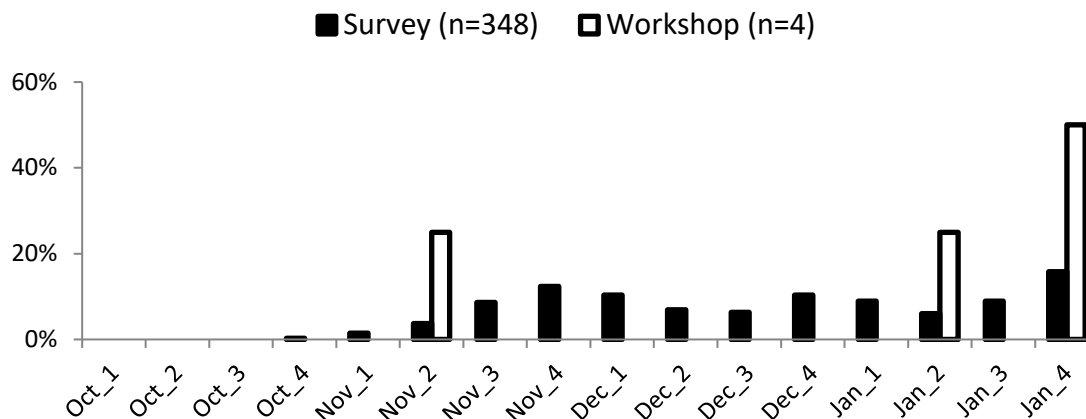


Figure 82. One week most preferred to hunt ducks by web survey respondents and workshop participants in the Bootheel - Border Region.

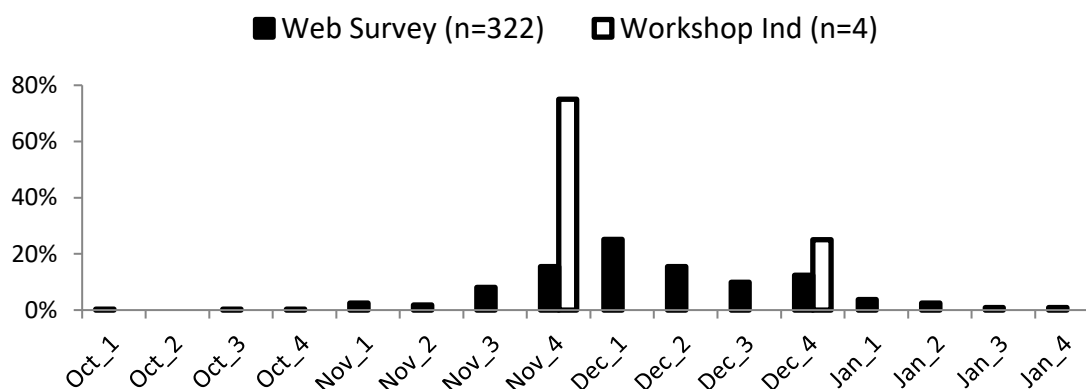


Figure 83. One week that web survey respondents and workshop participants from the Bootheel - Border Region would prefer a temporary closure in duck season.

Bootheel Border Region – Season Date Preferences

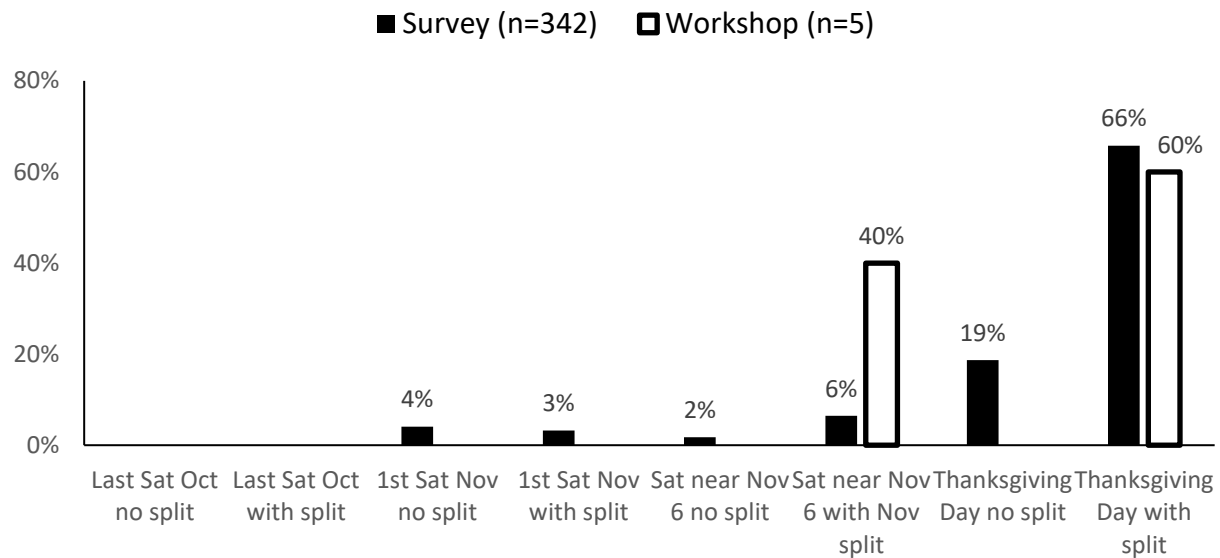


Figure 84. Season date preferences by web survey respondents and workshop participants in Bootheel Border Region.

Small Group Results

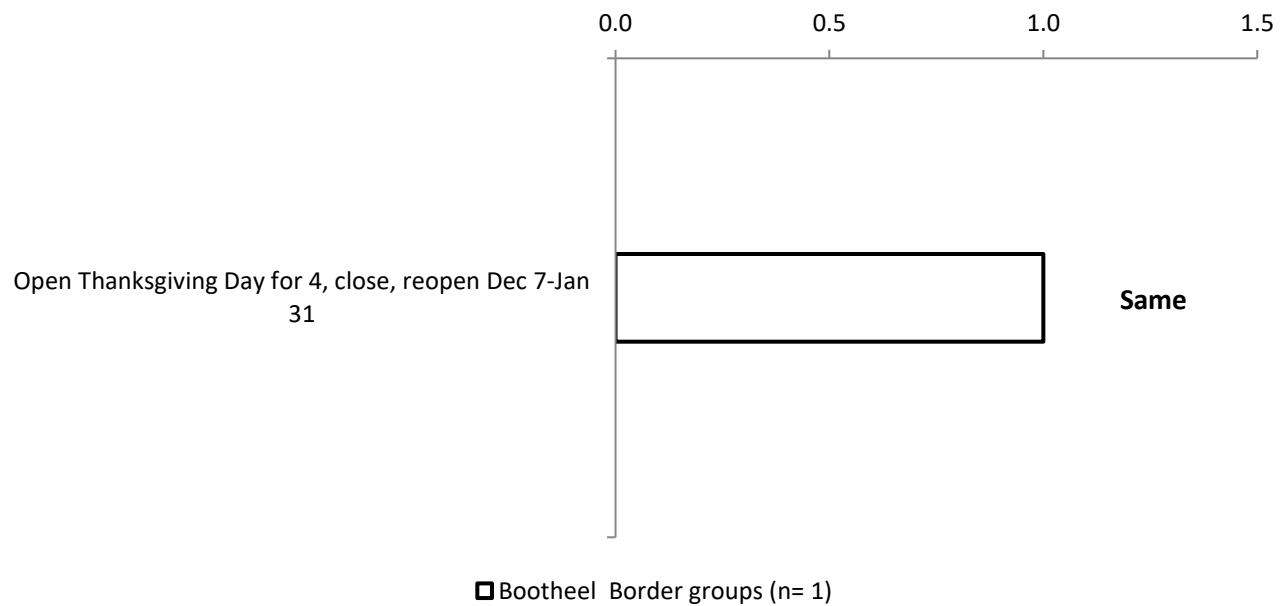
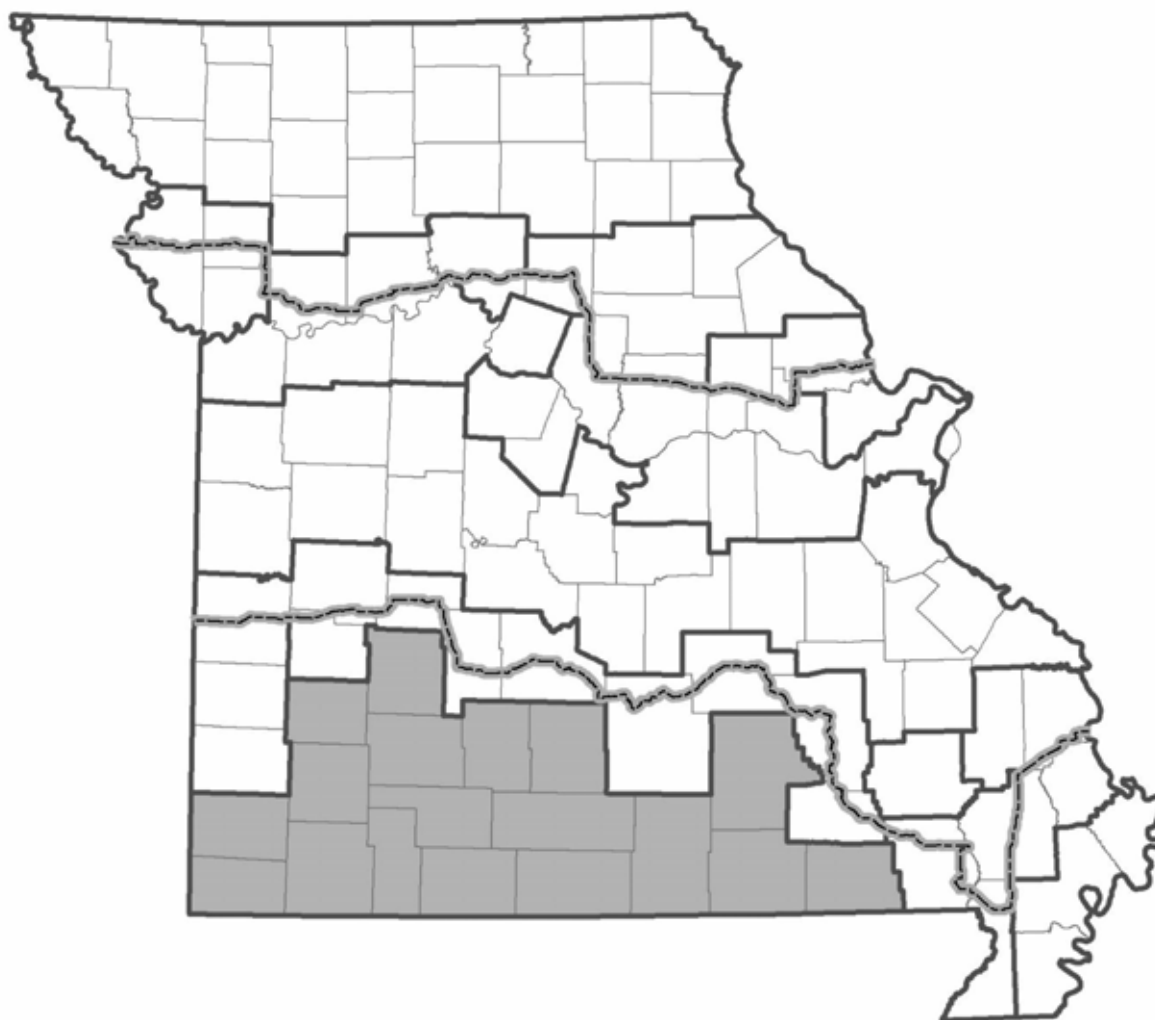


Figure 85. Sixty-day season date preferences for small groups from Bootheel Border Region.

South Region



South Region - Week Most Prefer to Hunt and Week Most Prefer a Split

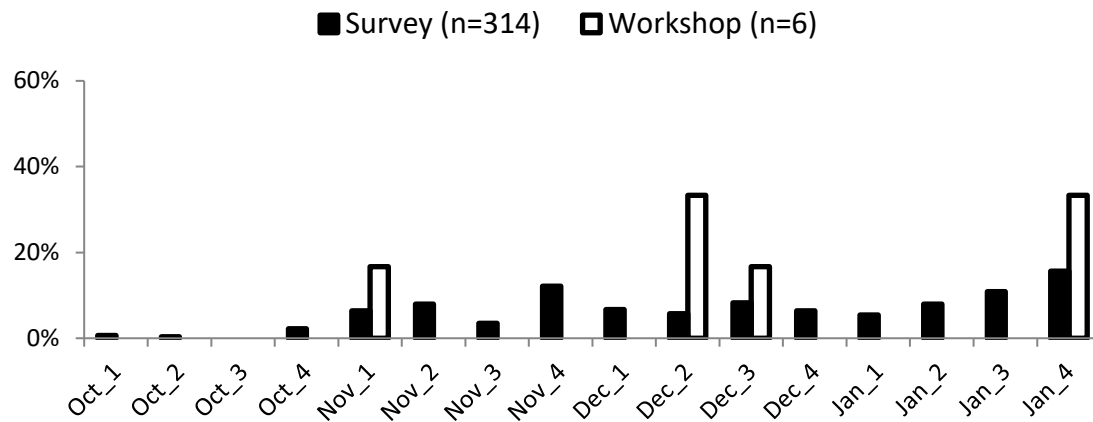


Figure 86 One week most preferred to hunt ducks by web survey respondents and workshop participants in the South Region.

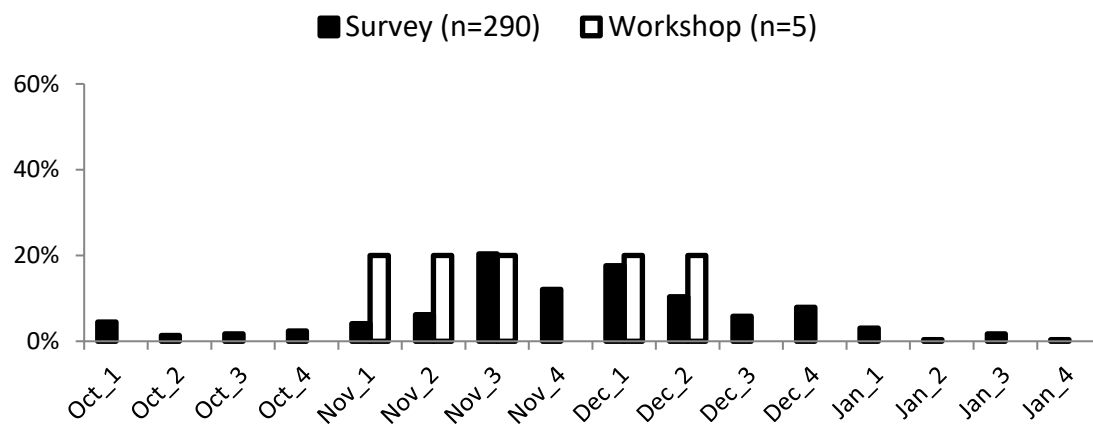


Figure 87. One week that web survey respondents and workshop participants from the South Region would prefer a temporary closure in duck season.

South Region – Season Date Preferences

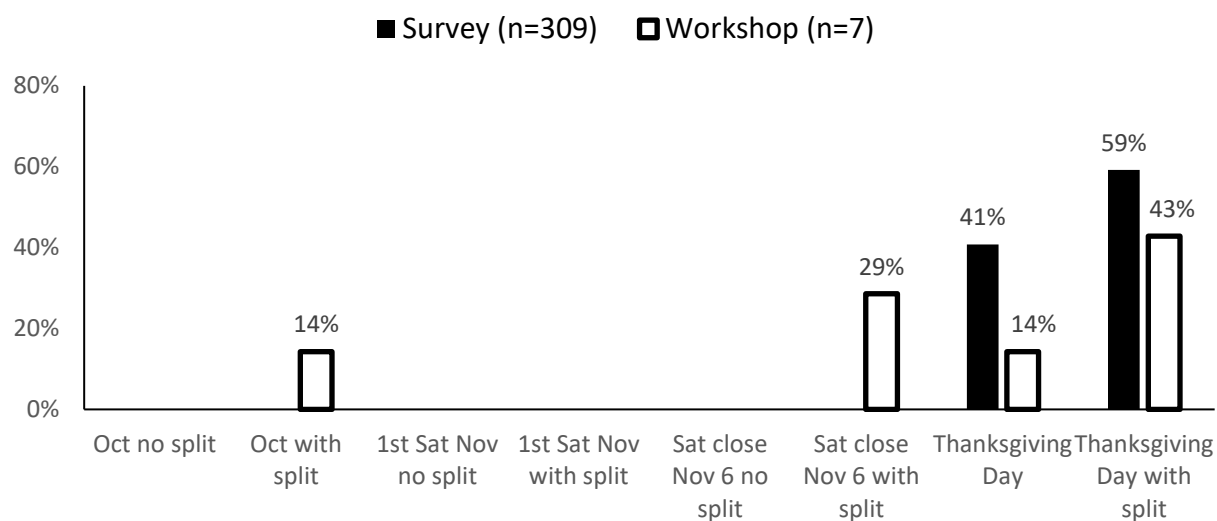


Figure 88. Season date preferences by web survey respondents and workshop participants in South Region.

Workshop Small groups

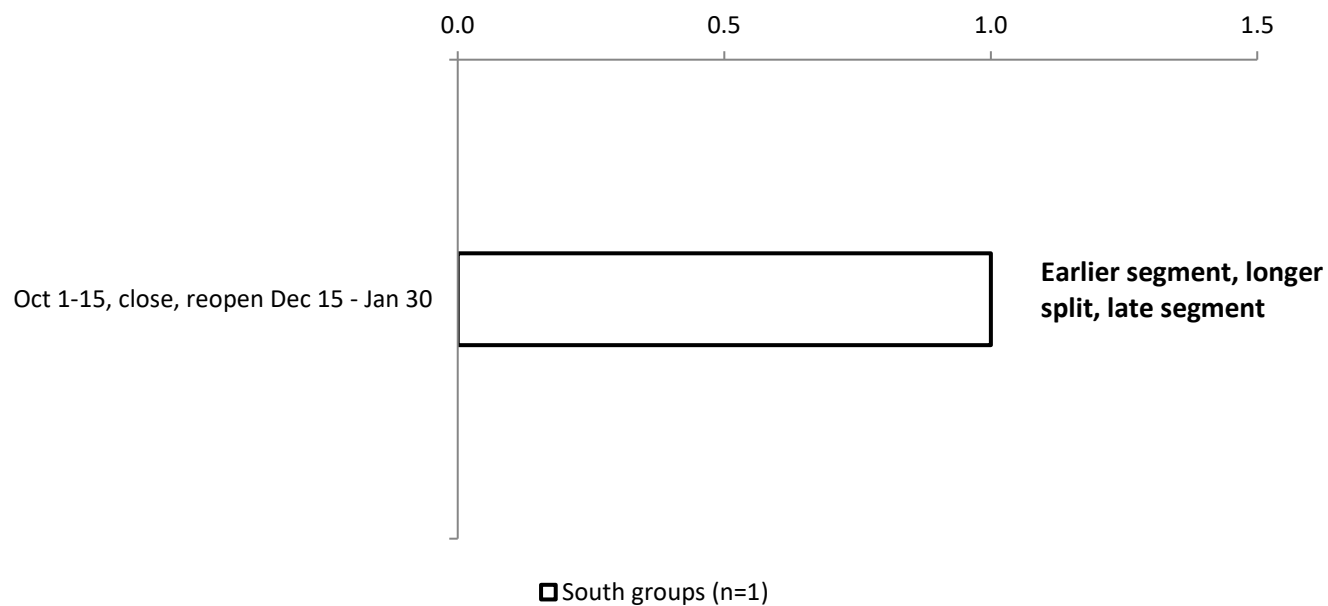


Figure 89. Sixty-day season date preferences for small groups from South region.

Bootheel Region

Bootheel Region - Week Most Prefer to Hunt and Week Most Prefer a Split

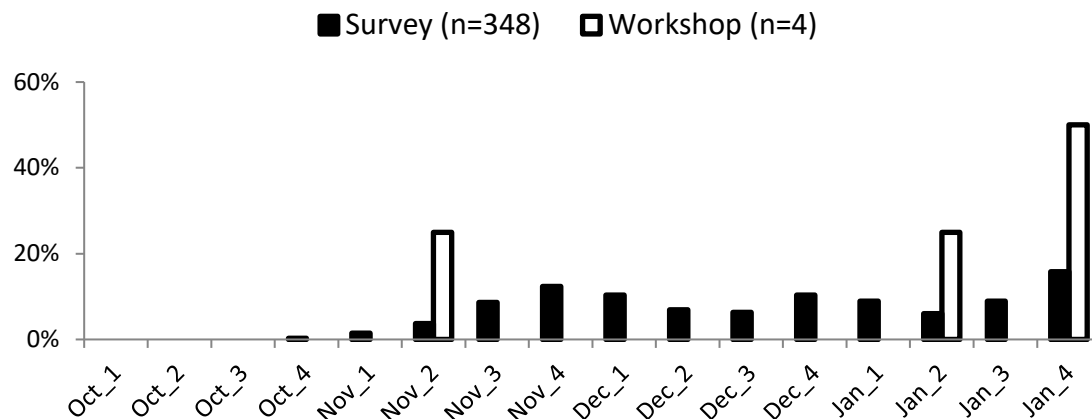


Figure 90. One week most preferred to hunt ducks by web survey respondents and workshop participants in the Bootheel - Border Region.

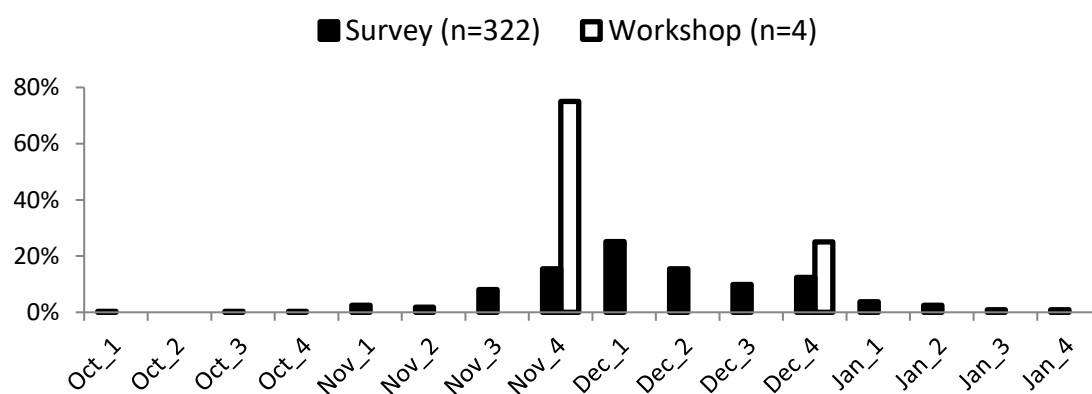


Figure 91. One week that web survey respondents and workshop participants from the Bootheel - Border Region would prefer a temporary closure in duck season.

Bootheel Region – Season Date Preferences

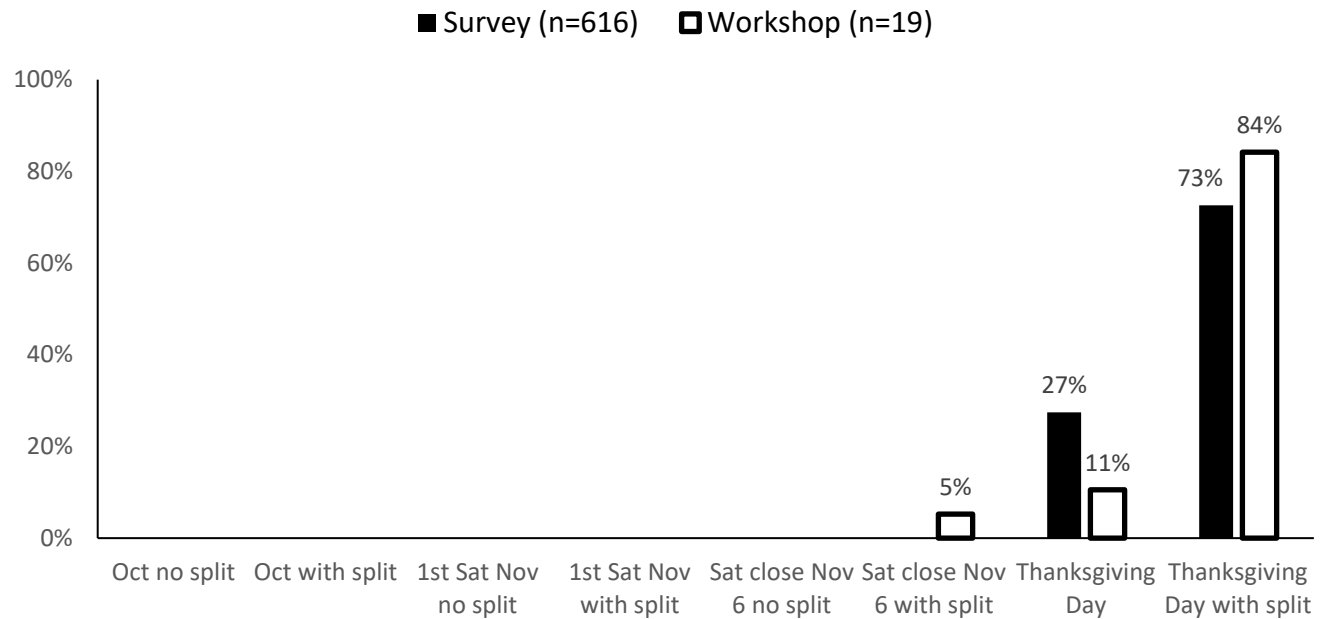


Figure 92. Season date preferences by web survey respondents and workshop participants in the Bootheel Region.

Workshop Small groups

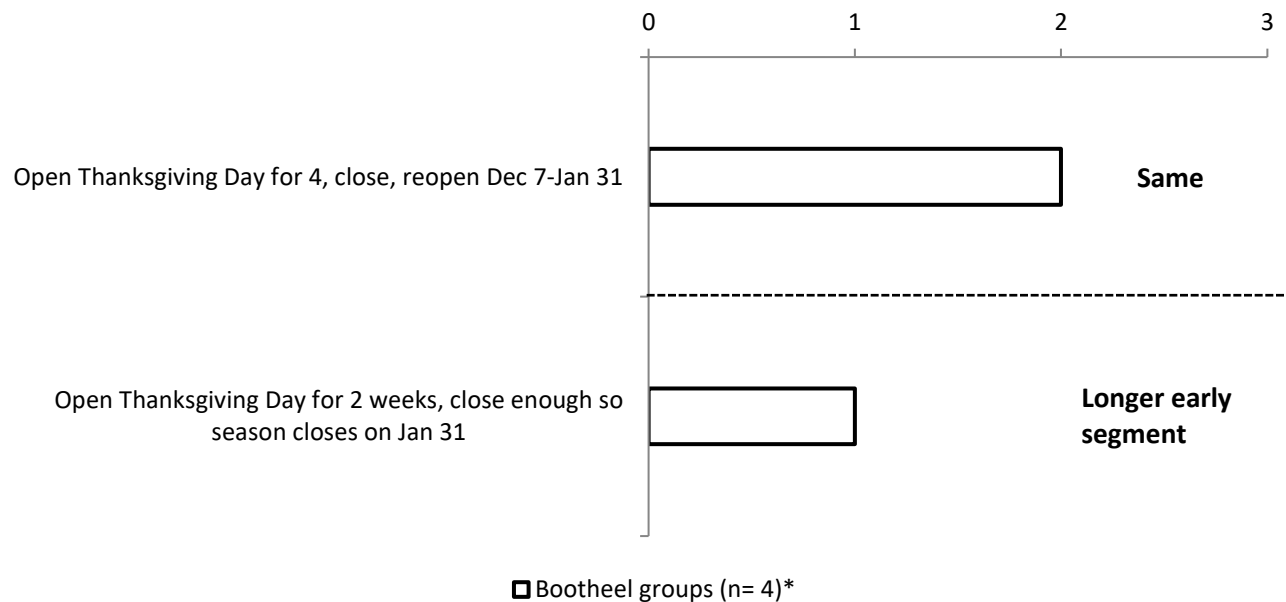


Figure 93. Sixty-day season date preferences for small groups from Bootheel Region.

*One group, not shown on graph, preferred two zones with two splits.